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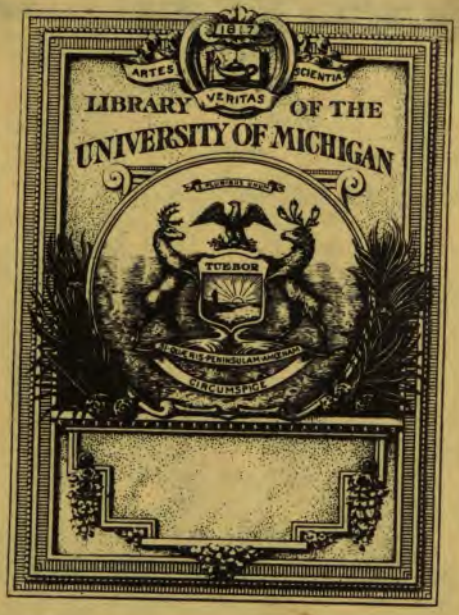
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To Mr. Geo. Duffield,
from his friend
C. Ely.
J235

THE

WORKS

OF

THOMAS REID, D.D.F.R.S.

EDINBURGH.

LATE PROFESSOR OF MORAL PHILOSOPHY IN THE UNIVERSITY OF GLASGOW.

WITH AN

ACCOUNT OF HIS LIFE AND WRITINGS,

BY DUGALD STEWART, F.R.S.

WITH NOTES, BY THE AMERICAN EDITORS.

IN FOUR VOLUMES.....VOL. III.

CHARLESTOWN,
PRINTED AND PUBLISHED BY SAMUEL ETHERIDGE, JUN'R.
1815.

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ESSAYS

ON THE

INTELLECTUAL POWERS OF MAN.

ESSAY V.

OF ABSTRACTION.

CHAP. I.

OF GENERAL WORDS.

The words we use in language are either general words, or proper names. Proper names are intended to signify one individual only. Such are the names of men, kingdoms, provinces, cities, rivers, and of every other creature of God, or work of man, which we choose to distinguish from all others of the kind, by a name appropriated to it. All the other words of language are general words, not appropriated to signify any one individual thing, but equally related to many.

Under general words, therefore, I comprehend, not only those which logicians call general terms; that is, such general words as may make the subject or the predicate of a proposition; but likewise their auxiliaries or accessories, as the learned Mr. Harris calls

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them; such as prepositions, conjunctions, articles, which are all general words, though they cannot properly be called general terms.

In every language, rude or polished, general words make the greatest part, and proper names the least. Grammarians have reduced all words to eight or nine classes, which are called parts of speech. Of these there is only one, to wit, that of *nouns*, wherein proper names are found. All *pronouns*, *verbs*, *participles*, *adverbs*, *articles*, *prepositions*, *conjunctions*, and *interjections*, are general words. Of *nouns*, all *adjectives* are general words, and the greater part of *substantives*. Every substantive that has a plural number, is a general word; for no proper name can have a plural number, because it signifies only one individual. In all the fifteen books of Euclid's Elements, there is not one word that is not general; and the same may be said of many large volumes.

At the same time it must be acknowledged, that all the objects we perceive are individuals. Every object of sense, of memory, or of consciousness, is an individual object. All the good things we enjoy or desire, and all the evils we feel or fear, must come from individuals; and I think we may venture to say, that every creature which God has made, in the heavens above, or in the earth beneath, or in the waters under the earth, is an individual.

How comes it to pass then, that in all languages, general words make the greatest part of the language, and proper names but a very small and inconsiderable part of it.

This seemingly strange phenomenon may, I think, be easily accounted for by the following observations.

First, Though there be a few individuals that are obvious to the notice of all men, and therefore have proper names in all languages; such as the sun and moon, the earth and sea; yet the greatest part of the things

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to which we think fit to give proper names are local; known perhaps to a village or to a neighbourhood, but unknown to the greater part of those who speak the same language, and to all the rest of mankind. The names of such things being confined to a corner, and having no names answering to them in other languages, are not accounted a part of the language, any more than the customs of a particular hamlet are accounted part of the law of the nation.

For this reason, there are but few proper names that belong to a language. It is next to be considered why there must be many general words in every language.

Secondly, It may be observed, that every individual object that falls within our view has various attributes; and it is by them that it becomes useful or hurtful to us. We know not the essence of any individual object; all the knowledge we can attain of it, is the knowledge of its attributes; its quantity, its various qualities, its various relations to other things, its place, its situation, and motions. It is by such attributes of things only that we can communicate our knowledge of them to others. By their attributes, our hopes or fears from them are regulated; and it is only by attention to their attributes that we can make them subservient to our ends; and therefore we give names to such attributes.

Now all attributes must from their nature be expressed by general words, and are so expressed in all languages. In the ancient philosophy, attributes in general were called by two names which express their nature. They were called *universals*, because they might belong equally to many individuals, and are not confined to one; they were also called *predicables*, because whatever is predicated, that is, affirmed or denied of one subject, may be of more, and therefore

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is an universal, and expressed by a general word. A predicable therefore signifies the same thing as an attribute, with this difference only, that the first is Latin, the last English. The attributes we find either in the creatures of God, or in the works of men, are common to many individuals. We either find it to be so, or presume it may be so, and give them the same name in every subject to which they belong.

There are not only attributes belonging to individual subjects, but there are likewise attributes of attributes, which may be called secondary attributes. Most attributes are capable of different degrees, and different modifications, which must be expressed by general words.

Thus it is an attribute of many bodies to be moved; but motion may be in an endless variety of directions. It may be quick or slow, rectilineal or curvilineal; it may be equable, or accellerated, or retarded.

As all attributes, therefore, whether primary or secondary, are expressed by general words, it follows, that in every proposition we express in language, what is affirmed or denied of the subject of the proposition must be expressed by general words: and that the subject of the proposition may often be a general word, will appear from the next observation.

Thirdly, The same faculties by which we distinguish the different attributes belonging to the same subject, and give names to them, enables us likewise to observe, that many subjects agree in certain attributes, while they differ in others. By this means we are enabled to reduce individuals which are infinite, to a limited number of classes, which are called kinds and sorts; and in the scholastic language, *genera* and *species*.

Observing many individuals to agree in certain attributes, we refer them all to one class, and give a name

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to the class. This name comprehends in its signification not one attribute only, but all the attributes which distinguish that class; and by affirming this name of any individual, we affirm it to have all the attributes which characterize the class. Thus men, dogs, horses elephants, are so many different classes of animals. In like manner we marshal other substances, vegetable and inanimate, into classes.

Nor is it only substances that we thus form into classes. We do the same, with regard to qualities, relations, actions, affections, passions, and all other things.

When a class is very large, it is divided into subordinate classes in the same manner. The higher class is called a *genus* or kind; the lower a *species* or sort of the higher. Sometimes a species is still subdivided into subordinate species; and this subdivision is carried on as far as is found convenient for the purpose of language, or for the improvement of knowledge.

In this distribution of things into *genera* and *species*, it is evident that the name of the species comprehends more attributes than the name of the genus. The species comprehends all that is in the genus, and those attributes likewise which distinguish that species from others belonging to the same genus; and the more subdivisions we make, the names of the lower become still the more comprehensive in their signification, but the less extensive in their application to individuals.

Hence it is an axiom in logic, that the more extensive any general term is, it is the less comprehensive; and on the contrary, the more comprehensive, the less extensive. Thus, in the following series of subordinate general terms, animal, man, Frenchman, Parisian, every subsequent term comprehends in its singification all that is in the preceding, and sometimes more; and every antecedent term extends to more individuals than the subsequent.

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Such divisions and subdivisions of things into *genera* and *species* with general names, are not confined to the learned and polished languages; they are found in those of the rudest tribes of mankind: from which we learn, that the invention and the use of general words, both to signify the attributes of things, and to signify the *genera* and *species* of things, is not a subtile invention of philosophers, but an operation which all men perform by the light of common sense. Philosophers may speculate about this operation, and reduce it to canons and aphorisms; but men of common understanding, without knowing any thing of the philosophy of it, can put it in practice; in like manner as they can see objects, and make use of their eyes, although they know nothing of the structure of the eye, or of the theory of vision.

Every genus, and every species of things, may be either the subject or the predicate of a proposition, nay, of innumerable propositions; for every attribute common to the genus or species may be affirmed of it; and the genus may be affirmed of every species, and both genus and species of every individual to which it extends.

Thus of man it may be affirmed, that he is an animal made up of body and mind; that he is of few days, and full of trouble; that he is capable of various improvements in arts, in knowledge, and in virtue. In a word, every thing common to the species may be affirmed of man; and of all such propositions, which are innumerable, man is the subject.

Again, of every nation and tribe, and of every individual of the human race that is, or was, or shall be, it may be affirmed that they are men. In all such propositions, which are innumerable, man is the predicate of the proposition.

We observed above an extension and a comprehension in general terms; and that in any subdivision of

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things the name of the lowest species is most comprehensive, and that of the highest genus most extensive. I would now observe, that, by means of such general terms, there is also an extension and comprehension of propositions, which is one of the noblest powers of language, and fits it for expressing, with great ease and expedition, the highest attainments in knowledge, of which the human understanding is capable.

When the predicate is a *genus* or a *species*, the proposition is more or less comprehensive, according as the predicate is. Thus, when I say that this seal is gold, by this single proposition, I affirm of it all the properties which that metal is known to have. When I say of any man that he is a mathematician, this appellation comprehends all the attributes that belong to him as an animal, as a man, and as one who has studied mathematics. When I say that the orbit of the planet Mercury is an ellipsis, I thereby affirm of that orbit all the properties which Apollonius and other Geometricians have discovered, or may discover, of that species of figure.

Again, when the subject of a proposition is a *genus* or a *species*, the proposition is more or less extensive, according as the subject is. Thus when I am taught, that the three angles of a plane triangle are equal to two right angles, this property extends to every species of plane triangle, and to every individual plane triangle that did, or does, or can exist.

It is by means of such extensive and comprehensive propositions that human knowledge is condensed, as it were, into a size adapted to the capacity of the human mind, with great addition to its beauty, and without any diminution of its distinctness and perspicuity.

General propositions in science may be compared to the seed of a plant, which, according to some phi-

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losophers, has not only the whole future plant enclosed within it, but the seeds of that plant, and the plants that shall spring from them through all future generations.

But the similitude falls short in this respect, that time and accidents, not in our power, must concur to disclose the contents of the seed, and bring them into our view; whereas the contents of a general proposition may be brought forth, ripened, and exposed to view at our pleasure, and in an instant.

Thus the wisdom of ages, and the most sublime theorems of science, may be laid up, like an Iliad in a nut shell, and transmitted to future generations. And this noble purpose of language can only be accomplished, by means of general words annexed to the divisions and subdivisions of things.

What has been said in this chapter, I think, is sufficient to show, that there can be no language, not so much as a single proposition, without general words; that they must make the greatest part of every language, and that it is by them only that language is fitted to express, with wonderful ease and expedition, all the treasures of human wisdom and knowledge.

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CHAP. II.

OF GENERAL CONCEPTIONS.

As general words are so necessary in language, it is natural to conclude that there must be general conceptions, of which they are the signs.

Words are empty sounds, when they do not signify the thoughts of the speaker; and it is only from their signification that they are denominated general. Every word that is spoken, considered merely as a sound, is an individual sound. And it can only be called a general word, because that which it signifies, is general. Now, that which it signifies, is conceived by the mind both of the speaker and hearer, if the word have a distinct meaning, and be distinctly understood. It is therefore impossible that words can have a general signification, unless there be conceptions in the mind of the speaker, and of the hearer, of things that are general. It is to such that I give the name of general conceptions: and it ought to be observed, that they take this denomination, not from the act of the mind in conceiving, which is an individual act, but from the object, or thing conceived, which is general.

We are therefore here to consider whether we have such general conceptions, and how they are formed.

To begin with the conceptions expressed by general terms, that is, by such general words as may be the subject or the predicate of a proposition. They are either attributes of things, or they are *genera* or *species* of things.

It is evident, with respect to all the individuals we are acquainted with, that we have a more clear and

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distinct conception of their attributes, than of the subject to which those attributes belong.

Take, for instance, any individual body we have access to know, what conception do we form of it? Every man may know this from his consciousness. He will find that he conceives it as a thing that has length, breadth, and thickness, such a figure, and such a colour; that it is hard, or soft, or fluid; that it has such qualities, and is fit for such purposes. If it is a vegetable, he may know where it grew, what is the form of its leaves, and flower, and seed. If an animal, what are its natural instincts, its manner of life, and of rearing its young. Of these attributes belonging to this individual, and numberless others, he may surely have a distinct conception; and he will find words in language by which he can clearly and distinctly express each of them.

If we consider, in like manner, the conception we form of any individual person of our acquaintance, we shall find it to be made up of various attributes, which we ascribe to him; such as, that he is the son of such a man, the brother of such another, that he has such an employment or office, has such a fortune, that he is tall or short, well or ill made, comely or ill favoured, young or old, married or unmarried; to this we may add, his temper, his character, his abilities, and perhaps some anecdotes of his history.

Such is the conception we form of individual persons of our acquaintance. By such attributes we describe them to those who know them not; and by such attributes historians give us a conception of the personages of former times. Nor is it possible to do it in any other way.

All the distinct knowledge we have or can attain of any individual, is the knowledge of its attributes: for we know not the essence of any indi-

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vidual. This seems to be beyond the reach of the human faculties.

Now, every attribute is what the ancients called an universal. It is, or may be, common to various individuals. There is no attribute belonging to any creature of God which may not belong to others; and, on this account, attributes, in all languages, are expressed by general words.

It appears likewise, from every man's experience, that he may have as clear and distinct a conception of such attributes as we have named, and of innumerable others, as he can have of any individual to which they belong.

Indeed the attributes of individuals is all that we distinctly conceive about them. It is true, we conceive a subject, to which the attributes belong; but of this subject, when its attributes are set aside, we have but an obscure and relative conception, whether it be body or mind.

This was before observed with regard to bodies, Essay 2d chap. 19. to which we refer, and it is no less evident with regard to minds. What is it we call a mind? It is a thinking, intelligent, active being. Granting, that thinking, intelligence, and activity, are attributes of mind, I want to know what the thing or being is, to which these attributes belong? To this question I can find no satisfying answer. The attributes of mind, and particularly its operations, we know clearly; but of the thing itself we have only an obscure notion.

Nature teaches us, that thinking and reasoning are attributes, which cannot exist without a subject; but of that subject I believe the best notion we can form implies little more than that it is the subject of such attributes.

Whether other created beings may have the knowledge of the real essence of created things, so as to be

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able to deduce their attributes from their essence and constitution, or whether this be the prerogative of Him who made them, we cannot tell; but it is a knowledge which seems to be quite beyond the reach of the human faculties.

We know the essence of a triangle, and from that essence can deduce its properties. It is an universal, and might have been conceived by the human mind, though no individual triangle had ever existed. It has only what Mr. Locke calls a nominal essence, which is expressed in its definition. But every thing that exists has a real essence, which is above our comprehension; and therefore we cannot deduce its properties or attributes from its nature, as we do in the triangle. We must take a contrary road in the knowledge of God's works, and satisfy ourselves with their attributes as facts, and with the general conviction that there is a subject to which those attributes belong.

Enough, I think, has been said, to show, not only that we may have clear and distinct conceptions of attributes, but that they are the only things, with regard to individuals, of which we have a clear and distinct conception.

The other class of general terms are those that signify the *genera* and *species* into which we divide and subdivide things. And if we be able to form distinct conceptions of attributes, it cannot surely be denied that we may have distinct conceptions of *genera* and *species*; because they are only collections of attributes which we conceive to exist in a subject, and to which we give a general name. If the attributes comprehended under that general name be distinctly conceived, the thing meant by the name must be distinctly conceived. And the name may justly be attributed to every individual which has those attributes.

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Thus, I conceive distinctly what it is to have wings, to be covered with feathers, to lay eggs. Suppose then that we give the name of *bird* to every animal that has these three attributes. Here undoubtedly my conception of a bird is as distinct as my notion of the attributes which are common to this species: and if this be admitted to be the definition of a bird, there is nothing I conceive more distinctly. If I had never seen a bird, and can but be made to understand the definition, I can easily apply it to every individual of the species, without danger of mistake.

When things are divided and subdivided by men of science, and names given to the *genera* and *species*, those names are defined. Thus, the genera and species of plants, and of other natural bodies, are accurately defined by the writers in the various branches of natural history; so that, to all future generations, the definition will convey a distinct notion of the genus or species defined.

There are, without doubt, many words signifying genera and species of things, which have a meaning somewhat vague and indistinct; so that those who speak the same language do not always use them in the same sense. But if we attend to the cause of this indistinctness, we shall find, that it is not owing to their being general terms, but to this, that there is no definition of them that has authority. Their meaning therefore, has not been learned by a definition, but by a kind of induction, by observing to what individuals they are applied by those who understand the language. We learn by habit to use them as we see others do, even when we have not a precise meaning annexed to them. A man may know, that to certain individuals they may be applied with propriety; but whether they can be applied to certain other individuals, he may be uncertain, either from want of good an-

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thorities, or from having contrary authorities, which leave him in doubt.

Thus, a man may know, that when he applies the name of beast to a lion or a tyger, and the name of bird to an eagle or a turkey, he speaks properly. But whether a bat be a bird or a beast, he may be uncertain. If there was any accurate definition of a beast and of a bird, that was of sufficient authority, he could be at no loss.

It is said to have been sometimes a matter of dispute, with regard to a monstrous birth of a woman, whether it was a man or not. Although this be in reality a question about the meaning of a word, it may be of importance, on account of the privileges which laws have annexed to the human character. To make such laws perfectly precise, the definition of a man would be necessary, which I believe legislators have seldom or never thought fit to give. It is, indeed, very difficult to fix a definition of so common a word, and the cases wherein it would be of any use so rarely occur, that perhaps it may be better, when they do occur, to leave them to the determination of a judge or of a jury, than to give a definition, which might be attended with unforeseen consequences.

A genus or species, being a collection of attributes, conceived to exist in one subject, a definition is the only way to prevent any addition or diminution, of its ingredients in the conception of different persons; and when there is no definition that can be appealed to as a standard, the name will hardly retain the most perfect precision in its signification.

From what has been said, I conceive it is evident, that the words which signify genera and species of things have often as precise and definite a signification as any words whatsoever; and that when it is otherwise, their want of precision is not owing to their being general words, but to other causes.

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Having shown that we may have a perfectly clear and distinct conception of the meaning of general terms, we may, I think, take it for granted, that the same may be said of other general words, such as prepositions, conjunctions, articles. My design at present being only to show, that we have general conceptions no less clear and distinct than those of individuals, it is sufficient for this purpose, if this appears with regard to the conceptions expressed by general terms. To conceive the meaning of a general word, and to conceive that which it signifies, is the same thing. We conceive distinctly the meaning of general terms, therefore we conceive distinctly that which they signify. But such terms do not signify any individual, but what is common to many individuals; therefore we have a distinct conception of things common to many individuals, that is, we have distinct general conceptions.

We must here beware of the ambiguity of the word *conception*, which sometimes signifies the act of the mind in conceiving, sometimes the thing conceived, which is the object of that act. If the word be taken in the first sense, I acknowledge that every act of the mind is an individual act; the universality, therefore, is not in the act of the mind, but in the object, or thing conceived. The thing conceived is an attribute common to many subjects, or it is a genus or species common to many individuals.

Suppose I conceive a triangle, that is, a plain figure terminated by three right lines. He that understands this definition distinctly has a distinct conception of a triangle. But a triangle is not an individual; it is a species. The act of my understanding in conceiving it is an individual act, and has a real existence; but the thing conceived is general, and cannot exist without other attributes, which are not included in the definition.

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Every triangle that really exists must have a certain length of sides and measure of angles; it must have place and time. But the definition of a triangle includes neither existence, nor any of those attributes; and therefore they are not included in the conception of a triangle, which cannot be accurate if it comprehend more than the definition.

Thus I think it appears to be evident, that we have general conceptions that are clear and distinct, both of attributes of things, and of genera and species of things.

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CHAP. III.

OF GENERAL CONCEPTIONS FORMED BY ANALYZING OBJECTS.

We are next to consider the operations of the understanding, by which we are enabled to form general conceptions.

These appear to me to be three; *first*, the resolving or analyzing a subject into its known attributes, and giving a name to each attribute, which name shall signify that attribute, and nothing more.

Secondly, The observing one or more such attributes to be common to many subjects. The first is by philosophers called *abstraction*; the second may be called *generalizing*; but both are commonly included under the name of *abstraction*.

It is difficult to say which of them goes first, or whether they are not so closely connected that neither can claim the precedence. For on the one hand, to perceive an agreement between two or more objects in the same attribute, seems to require nothing more than to compare them together. A savage, upon seeing snow and chalk, would find no difficulty in perceiving that they have the same colour. Yet, on the other hand, it seems impossible that he should observe this agreement without abstraction, that is, distinguishing in his conception the colour, wherein those two objects agree, from the other qualities wherein they disagree.

It seems, therefore, that we cannot generalize without some degree of abstraction; but I apprehend we may abstract without generalizing: for what hinders me from attending to the whiteness of the paper before me, without applying that colour to any

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other object? The whiteness of this individual object is an abstract conception, but not a general one, while applied to one individual only. These two operations, however, are subservient to each other; for the more attributes we observe and distinguish in any one individual, the more agreements we shall discover between it and other individuals.

A *third* operation of the understanding, by which we form abstract conceptions, is the combining into one whole a certain number of those attributes of which we have formed abstract notions, and giving a name to that combination. It is thus we form abstract notions of the genera and species of things. These three operations we shall consider in order.

With regard to abstraction, strictly so called, I can perceive nothing in it that is difficult either to be understood or practised. What can be more easy than to distinguish the different attributes which we know to belong to a subject? In a man, for instance, to distinguish his size, his complexion, his age, his fortune, his birth, his profession, and twenty other things that belong to him. To think and speak of these things with understanding, is surely within the reach of every man endowed with the human faculties.

There may be distinctions that require nice discernment, or an acquaintance with the subject that is not common. Thus, a critic in painting, may discern the style of Raphael or Titian, when another man could not. A lawyer may be acquainted with many distinctions in crimes, and contracts, and actions, which never occurred to a man who has not studied law. One man may excel another in the talent of distinguishing, as he may in memory or in reasoning: but there is a certain degree of this talent, without which a man would have no title to be considered as a reasonable creature.

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It ought likewise to be observed, that attributes may with perfect ease be distinguished and disjoined in our conception, which cannot be actually separated in the subject. Thus, in a body, I can distinguish its solidity from its extension, and its weight from both. In extension I can distinguish length, breadth, and thickness, yet none of these can be separated from the body, or from one another. There may be attributes belonging to a subject, and inseparable from it, of which we have no knowledge, and consequently no conception; but this does not hinder our conceiving distinctly those of its attributes which we know.

Thus, all the properties of a circle are inseparable from the nature of a circle, and may be demonstrated from its definition; yet a man may have a perfectly distinct notion of a circle, who knows very few of those properties of it which mathematicians have demonstrated; and a circle probably has many properties which no mathematician ever dreamed of.

It is therefore certain, that attributes, which in their nature are absolutely inseparable from their subject, and from one another, may be disjoined in our conception; one cannot exist without the other, but one can be conceived without the other.

Having considered abstraction, strictly so called, let us next consider the operation of generalizing, which is nothing but the observing one or more attributes to be common to many subjects.

If any man can doubt whether there be attributes that are really common to many individuals, let him consider whether there be not many men that are above six feet high, and many below it; whether there be not many men that are rich, and many more that are poor; whether there be not many that were born in Britain, and many that were born in France. To multiply instances of this kind, would be to affront the reader's

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understanding. It is certain therefore, that there are innumerable attributes that are really common to many individuals; and if this be what the schoolmen called *universale a parte rei*, we may affirm with certainty, that there are such universals.

There are some attributes expressed by general words, of which this may seem more doubtful. Such are the qualities which are inherent in their several subjects. It may be said that every subject has its own qualities, and that which is the quality of one subject, cannot be the quality of another subject. Thus the whiteness of the sheet of paper upon which I write, cannot be the whiteness of another sheet, though both are called white. The weight of one guinea is not the weight of another guinea, though both are said to have the same weight.

To this I answer, that the whiteness of this sheet is one thing, whiteness is another; the conceptions signified by these two forms of speech are as different as the expressions: the first signifies an individual quality really existing, and is not a general conception, though it be an abstract one; the second signifies a general conception, which implies no existence, but may be predicated of every thing that is white, and in the same sense. On this account, if one should say, that the whiteness of this sheet is the whiteness of another sheet, every man perceives this to be absurd; but when he says both sheets are white, this is true and perfectly understood. The conception of whiteness implies no existence; it would remain the same, though every thing in the universe that is white were annihilated.

It appears, therefore, that the general names of qualities, as well as of other attributes, are applicable to many individuals in the same sense, which cannot be if there be not general conceptions signified by such names.

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If it should be asked, how early, or at what period of life, men begin to form general conceptions? I answer, as soon as a child can say, with understanding, that he has two brothers or two sisters; as soon as he can use the plural number, he must have general conceptions; for no individual can have a plural number.

As there are not two individuals in nature that agree in every thing, so there are very few that do not agree in some things. We take pleasure from very early years in observing such agreements. One great branch of what we call *wit*, which, when innocent, gives pleasure to every good natured man, consists in discovering unexpected agreements in things. The author of Hudibras could discern a property common to the morning and a boiled lobster, that both turn from black to red. Swift could see something common to wit and an old cheese. Such unexpected agreements may show wit; but there are innumerable agreements of things which cannot escape the notice of the lowest understanding; such as agreements in colour, magnitude, figure, features, time, place, age, and so forth. These agreements are the foundation of so many common attributes, which are found in the rudest languages.

The ancient philosophers called these universals, or predicables, and endeavoured to reduce them to five classes; to wit, genus, species, specific difference, properties, and accidents. Perhaps there may be more classes of universals or attributes; for enumerations, so very general, are seldom complete; but every attribute, common to several individuals, may be expressed by a general term, which is the sign of a general conception.

How prone men are to form general conceptions we may see from the use of metaphor, and of the other figures of speech grounded on similitude. Similitude is nothing else than an agreement of the objects com-

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pared in one or more attributes; and if there be no attribute common to both, there can be no similitude.

The similitudes and analogies between the various objects that nature presents to us, are infinite and inexhaustible. They not only please, when displayed by the poet or wit in works of taste, but they are highly useful in the ordinary communication of our thoughts and sentiments by language. In the rude languages of barbarous nations, similitudes and analogies supply the want of proper words to express men's sentiments, so much, that in such languages, there is hardly a sentence without a metaphor; and if we examine the most copious and polished languages, we shall find that a great proportion of the words and phrases which are accounted the most proper, may be said to be the progeny of metaphor.

As foreigners, who settle in a nation as their home, come at last to be incorporated, and lose the denomination of foreigners, so words and phrases, at first borrowed and figurative, by long use become denizens in the language, and lose the denomination of figures of speech. When we speak of the extent of knowledge, the steadiness of virtue, the tenderness of affection, the perspicuity of expression, no man conceives these to be metaphorical expressions; they are as proper as any in the language: yet it appears upon the very face of them, that they must have been metaphorical in those who used them first; and that it is by use and prescription that they have lost the denomination of figurative, and acquired a right to be considered proper words. This observation will be found to extend to a great part, perhaps the greatest part, of the words of the most perfect languages. Sometimes the name of an individual is given to a general conception, and thereby the individual in a manner generalized. As when the Jew Shylock, in Shakespeare, says, A Dan-

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iel come to judgment; yea, a Daniel! In this speech, a Daniel, is an attribute, or an universal. The character of Daniel, as a man of singular wisdom, is abstracted from his person, and considered as capable of being attributed to other persons.

Upon the whole, these two operations of abstracting and generalizing appear common to all men that have understanding. The practice of them is, and must be, familiar to every man that uses language; but it is one thing to practise them, and another to explain how they are performed; as it is one thing to see, another to explain how we see. The first is the province of all men, and is the natural and easy operation of the faculties which God has given us. The second is the province of philosophers, and though a matter of no great difficulty in itself, has been much perplexed by the ambiguity of words, and still more by the hypotheses of philosophers.

Thus when I consider a billiard ball, its colour is one attribute, which I signify by calling it white; its figure is another, which is signified by calling it spherical; the firm cohesion of its parts is signified by calling it hard; its recoiling, when it strikes a hard body, is signified by its being called elastic; its origin, as being part of the tooth of an elephant, is signified by calling it ivory; and its use by calling it a billiard ball.

The words, by which each of those attributes is signified, have one distinct meaning, and in this meaning are applicable to many individuals. They signify not any individual thing, but attributes common to many individuals; nor is it beyond the capacity of a child to understand them perfectly, and to apply them properly to every individual in which they are found.

As it is by analyzing a complex object into its several attributes that we acquire our simplest abstract conceptions, it may be proper to compare this analysis

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with that which a chymist makes of a compounded body into the ingredients which enter into its composition; for although there be such an analogy between these two operations, that we give to both the name of analysis or resolution, there is at the same time so great a dissimilitude in some respects, that we may be led into error, by applying to one what belongs to the other.

It is obvious, that the chymical analysis is an operation of the hand upon matter, by various material instruments. The analysis we are now explaining is purely an operation of the understanding, which requires no material instrument, nor produces any change upon any external thing; we shall therefore call it the intellectual or mental analysis.

In the chymical analysis, the compound body itself is the subject analyzed. A subject so imperfectly known, that it may be compounded of various ingredients, when to our senses it appears perfectly simple; and even when we are able to analyze it into the different ingredients of which it is composed, we know not how or why the combination of those ingredients produces such a body.

Thus pure sea salt is a body to appearance, as simple as any in nature. Every the least particle of it, discernible by our senses, is perfectly similar to every other particle in all its qualities. The nicest taste, the quickest eye, can discern no mark of its being made up of different ingredients; yet, by the chymical art, it can be analyzed into an acid and an alkali, and can be again produced by the combination of those two ingredients. But how this combination produces sea salt, no man has been able to discover. The ingredients are both as unlike the compound as any bodies we know. No man could have guessed, before the thing was known, that sea salt is compounded of those two in-

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gredients; no man could have guessed, that the union of those two ingredients should produce such a compound as sea salt. Such in many cases are the phenomena of the chymical analysis of a compound body.

If we consider the intellectual analysis of an object, it is evident that nothing of this kind can happen; because the thing analyzed is not an external object imperfectly known; it is a conception of the mind itself. And to suppose that there can be any thing in a conception that is not conceived, is a contradiction.

The reason of observing this difference between those two kinds of analysis is, that some philosophers, in order to support their systems, have maintained, that a complex idea may have the appearance of the most perfect simplicity, and retain no similitude of any of the simple ideas of which it is compounded; just as a white colour may appear perfectly simple, and retain no similitude to any of the seven primary colours of which it is compounded; or as a chymical composition may appear perfectly simple, and retain no similitude to any of the ingredients.

From which those philosophers have drawn this important conclusion, that a cluster of the ideas of sense, properly combined, may make the idea of a mind; and that all the ideas, which Mr. Locke calls ideas of reflection, are only compositions of the ideas which we have by our five senses. From this the transition is easy, that if a proper composition of the ideas of matter may make the idea of a mind, then a proper composition of matter itself may make a mind, and that man is only a piece of matter curiously formed.

In this curious system, the whole fabric rests upon this foundation, that a complex idea, which is made up of various simple ideas, may appear to be perfectly simple, and to have no marks of composition, because

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a compound body may appear to our senses to be perfectly simple.

Upon this fundamental proposition of this system I beg leave to make two remarks.

1st. Supposing it to be true, it affirms only what *may be*. We are indeed in most cases very imperfect judges of what may be. But this we know, that were we ever so certain that a thing may be, this is no good reason for believing that it really is. A *may be* is a mere hypothesis, which may furnish matter of investigation, but is not entitled to the least degree of belief. The transition from what may be to what really is, is familiar and easy to those who have a predilection for a hypothesis; but to a man who seeks truth without prejudice or prepossession, it is a very wide and difficult step, and he will never pass from the one to the other, without evidence, not only that the thing may be, but that it really is.

2dly. As far as I am able to judge, this, which it is said may be, cannot be. That a complex idea should be made up of simple ideas, so that to a ripe understanding reflecting upon that idea, there should be no appearance of composition, nothing similar to the simple ideas of which it is compounded, seems to me to involve a contradiction. The idea is a conception of the mind. If any thing more than this is meant by the idea, I know not what it is; and I wish both to know what it is, and to have proof of its existence. Now that there should be any thing in the conception of an object which is not conceived, appears to me as manifest a contradiction, as that there should be an existence which does not exist, or that a thing should be conceived, and not conceived at the same time.

But, say these philosophers, a white colour is produced by the composition of the primary colours, and yet has no resemblance to any of them. I grant it.

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But what can be inferred from this with regard to the composition of ideas? To bring this argument home to the point, they must say, that because a white colour is compounded of the primary colours, therefore the idea of a white colour is compounded of the ideas of the primary colours. This reasoning, if it was admitted, would lead to innumerable absurdities. An opaque fluid may be compounded of two or more pellucid fluids. Hence we might infer with equal force, that the idea of an opaque fluid may be compounded of the idea of two or more pellucid fluids.

Nature's way of compounding bodies, and our way of compounding ideas, are so different in many respects, that we cannot reason from the one to the other, unless it can be found, that ideas are combined by fermentations and elective attractions, and may be analyzed in a furnace by the force of fire and of menstruums. Until this discovery be made, we must hold those to be simple ideas, which, upon the most attentive reflection, have no appearance of composition; and those only to be the ingredients of complex ideas, which, by attentive reflection, can be perceived to be contained in them.

If the idea of mind, and its operations, may be compounded of the ideas of matter and its qualities, why may not the idea of matter be compounded of the ideas of mind? There is the same evidence for the last *may be* as for the first. And why may not the idea of sound be compounded of the ideas of colour; or the idea colour of those of sound? Why may not the idea of wisdom be compounded of ideas of folly; or the idea of truth of ideas of absurdity? But we leave those mysterious *may bes* to them that have faith to receive them.

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CHAP. IV.

OF GENERAL CONCEPTIONS FORMED BY COMBINATION.

As, by an intellectual analysis of objects, we form general conceptions of single attributes, which, of all conceptions that enter into the human mind, are the most simple, so by combining several of these into one parcel, and giving a name to that combination, we form general conceptions that may be very complex, and at the same time very distinct.

Thus one, who, by analyzing extended objects, has got the simple notions of a point, a line, straight or curve, an angle, a surface, a solid, can easily conceive a plain surface, terminated by four equal straight lines meeting in four points at right angles. To this species of figure he gives the name of a square. In like manner, he can conceive a solid terminated by six equal squares, and give it the name of a cube. A square, a cube, and every name of mathematical figure, is a general term, expressing a complex general conception, made by a certain combination of the simple elements into which we analyze extended bodies.

Every mathematical figure is accurately defined, by enumerating the simple elements of which it is formed, and the manner of their combination. The definition contains the whole essence of it: and every property that belongs to it may be deduced by demonstrative reasoning from its definition. It is not a thing that exists, for then it would be an individual; but it is a thing that is conceived without regard to existence.

A farm, a manor, a parish, a county, a kingdom, are complex general conceptions, formed by various combinations and modifications of inhabited territory, under certain forms of government.

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Different combinations of military men form the notions of a company, a regiment, an army.

The several crimes which are the objects of criminal law, such as theft, murder, robbery, piracy, what are they but certain combinations of human actions and intentions, which are accurately defined in criminal law, and which it is found convenient to comprehend under one name, and consider as one thing?

When we observe, that nature, in her animal, vegetable, and inanimate productions, has formed many individuals that agree in many of their qualities and attributes, we are led by natural instinct to expect their agreement in other qualities, which we have not had occasion to perceive. Thus, a child who has once burnt his finger, by putting it in the flame of one candle, expects the same event if he puts it in the flame of another candle, or in any flame, and is thereby led to think that the quality of burning belongs to all flame. This instinctive induction is not justified by the rules of logic, and it sometimes leads men into harmless mistakes, which experience may afterward correct; but it preserves us from destruction in innumerable dangers to which we are exposed.

The reason of taking notice of this principle in human nature in this place is, that the distribution of the productions of nature into *genera* and *species* becomes, on account of this principle, more generally useful.

The physician expects, that the rhubarb which has never yet been tried will have like medical virtues with that which he has prescribed on former occasions. Two parcels of rhubarb agree in certain sensible qualities, from which agreement they are both called by the same general name *rhubarb*. Therefore it is expected that they will agree in their medical virtues. And as experience, has discovered certain virtues in one parcel, or in many parcels, we presume, without

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experience, that the same virtues belong to all parcels of rhubarb that shall be used.

If a traveller meets a horse, an ox, or a sheep, which he never saw before, he is under no apprehension, believing these animals to be of a species that is tame and inoffensive. But he dreads a lion or a tiger, because they are of a fierce and ravenous species.

We are capable of receiving innumerable advantages, and are exposed to innumerable dangers, from the various productions of nature, animal, vegetable, and inanimate. The life of man, if an hundred times longer than it is, would be insufficient to learn from experience the useful and hurtful qualities of every individual production of nature taken singly.

The Author of nature has made provision for our attaining that knowledge of his works which is necessary for our subsistence and preservation, partly by the constitution of the productions of nature, and partly by the constitution of the human mind.

For, *first*, In the productions of nature, great numbers of individuals are made so like to one another, both in their obvious and in their more occult qualities, that we are not only enabled, but invited, as it were, to reduce them into classes, and to give a general name to a class; a name which is common to every individual of the class, because it comprehends in its signification those qualities or attributes only that are common to all the individuals of that class.

Secondly, The human mind is so framed, that, from the agreement of individuals in the more obvious qualities by which we reduce them into one class, we are naturally led to expect that they will be found to agree in their more latent qualities, and in this we are seldom disappointed.

We have, therefore, a strong and rational inducement, both to distribute natural substances into classes,

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genera and *species*, under general names; and to do this with all the accuracy and distinctness we are able. For the more accurate our divisions are made, and the more distinctly the several species are defined, the more securely we may rely, that the qualities we find in one or in a few individuals will be found in all of the same species.

Every species of natural substances which has a name in language, is an attribute of many individuals, and is itself a combination of more simple attributes, which we observe to be common to those individuals.

We shall find a great part of the words of every language, nay, I apprehend, the far greater part, to signify combinations of more simple general conceptions, which men have found proper to be bound up, as it were, in one parcel, by being designed by one name.

Some general conceptions there are, which may more properly be called *compositions* or *works* than mere combinations. Thus, one may conceive a machine which never existed. He may conceive an air in music, a poem, a plan of architecture, a plan of government, a plan of conduct in public or in private life, a sentence, a discourse, a treatise. Such compositions are things conceived in the mind of the author, not individuals that really exist; and the same general conception which the author had may be communicated to others by language.

Thus, the Oceana of Harrington was conceived in the mind of its author. The materials of which it is composed are things conceived, not things that existed. His senate, his popular assembly, his magistrates, his elections, are all conceptions of his mind, and the whole is one complex conception. And the same may be said of every work of the human understanding.

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Very different from these are the works of God, which we behold. They are works of creative power, not of understanding only. They have a real existence. Our best conceptions of them are partial and imperfect. But of the works of the human understanding our conception may be perfect and complete. They are nothing but what the author conceived, and what he can express by language, so as to convey his conception perfectly to men like himself.

Although such works are indeed complex general conceptions, they do not so properly belong to our present subject. They are more the objects of judgment and of taste, than of bare conception or simple apprehension.

To return therefore to those complex conceptions which are formed merely by combining those that are more simple. Nature has given us the power of combining such simple attributes, and such a number of them as we find proper; and of giving one name to that combination, and considering it as one object of thought.

The simple attributes of things, which fall under our observation, are not so numerous but that they may all have names in a copious language. But to give names to all the combinations that can be made of two, three, or more of them, would be impossible. The most copious languages have names but for a very small part.

It may likewise be observed, that the combinations that have names are nearly, though not perfectly, the same in the different languages of civilized nations, that have intercourse with another. Hence it is, that the Lexicographer, for the most part, can give words in one language answering perfectly, or very nearly, to those of another; and what is wrote in a simple style in one language, can be translated almost word for word into another.

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From these observations we may conclude, that there are either certain common principles of human nature, or certain common occurrences of human life, which dispose men, out of an infinite number that might be formed, to form certain combinations rather than others.

Mr. Hume, in order to account for this phenomenon, has recourse to what he calls the associating qualities of ideas; to wit, causation, contiguity in time, and place, and similitude. He conceives, "that one of the most remarkable effects of those associating qualities, is the complex ideas which are the common subjects of our thoughts. That this also is the cause why languages so nearly correspond to one another. Nature in a manner pointing out to every one those ideas which are most proper to be united into a complex one."

I agree with this ingenious author, that nature in a manner points out those simple ideas which are most proper to be united into a complex one; but nature does this, not solely or chiefly by the relations between the simple ideas, of contiguity, causation, and resemblance; but rather by the fitness of the combinations we make, to aid our own conceptions, and to convey them to others by language easily and agreeably.

The end and use of language, without regard to the associating qualities of ideas, will lead men that have common understanding to form such complex notions as are proper for expressing their wants, their thoughts, and their desires; and in every language we shall find these to be the complex notions that have names.

In the rudest state of society, men must have occasion to form the general notions of man, woman, father, mother, son, daughter, sister, brother, neighbour, friend, enemy, and many others, to express the common relations of one person to another.

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If they are employed in hunting, they must have general terms to express the various implements and operations of the chase. Their houses and clothing, however simple, will furnish another set of general terms, to express the materials, the workmanship, and excellencies and defects of those fabrics. If they sail upon rivers, or upon the sea, this will give occasion to a great number of general terms, which otherwise would never have occurred to their thoughts.

The same thing may be said of agriculture, of pasturage, of every art they practise, and of every branch of knowledge they attain. The necessity of general terms for communicating our sentiment is obvious; and the invention of them, as far as we find them necessary, requires no other talent but that degree of understanding which is common to men.

The notions of debtor and creditor, of profit and loss, of account, balance, stock on hand, and many others, are owing to commerce. The notions of latitude, longitude, course, distance run; and those of ships, and of their various parts, furniture and operations, are owing to navigation. The anatomist must have names, for the various similar and dissimilar parts of the human body, and words, to express their figure, position, structure, and use. The physician must have names for the various diseases of the body, their causes, symptoms, and means of cure.

The like may be said of the grammarian, the logician, the critic, the rhetorician, the moralist, the naturalist, the mechanic, and every man that professes any art or science.

When any discovery is made in art or in nature, which requires new combinations and new words to express it properly, the invention of these is easy to those who have a distinct notion of the thing to be expressed; and such words will readily be adopted, and receive the public sanction.

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If, on the other hand, any man of eminence, through vanity or want of judgment, should invent new words, to express combinations that have neither beauty nor utility, or which may as well be expressed in the current language, his authority may give them currency for a time with servile imitators, or blind admirers; but the judicious will laugh at them, and they will soon lose their credit. So true was the observation made by Pomponius Marcellus, an ancient grammarian, to Tiberius Cæsar. "You Cæsar, have power to make a man a denizen of Rome, but not to make a word a denizen of the Roman language."

Among nations that are civilised, and have intercourse with one another, the most necessary and useful arts will be common; the important parts of human knowledge will be common; their several languages will be fitted *text*, and consequently to one another.

New inventions of general use give an easy birth to new complex notions and new names, which spread as far as the invention does. How many new complex notions have been formed, and names for them invented in the languages of Europe, by the modern inventions of printing, of gunpowder, of the mariner's compass, of optical glasses! The simple ideas contained in these complex notions, and the associating qualities of these ideas, are very ancient; but they never produced these complex notions until there was use for them.

What is peculiar to a nation in its customs, manners, or laws, will give occasion to complex notions, and words peculiar to the language of that nation. Hence it is easy to see, why an *impeachment*, and an *attainder*, in the English language, and *ostracism* in the Greek language, have not names answering to them in other languages.

I apprehend, therefore, that it is utility, and not the associating qualities of the ideas, that has led men to

form only certain combinations, and to give names to them in language, while they neglect an infinite number that might be formed.

The common occurrences of life, in the intercourse of men, and in their occupations, give occasion to many complex notions. We see an individual occurrence, which draws our attention more or less, and may be a subject of conversation. Other occurrences, similar to this in many respects, have been observed, as may be expected. It is convenient that we should be able to speak of what is common to them all, leaving out the unimportant circumstances of time, place, and persons. This we can do with great ease, by giving a name to what is common to all these individual occurrences. Such a name is a great aid to language, because it comprehends, in one word, a great number of simple notions, which it would be very tedious to express in detail.

Thus men have formed the complex notions of eating, drinking, sleeping, walking, riding, running, buying, selling, ploughing, sowing, a dance, a feast, war, a battle, victory, triumph; and others without number.

Such things most frequently be the subject of conversation; and if we had not a more compendious way of expressing them than by a detail of all the simple notions they comprehend, we should lose the benefit of speech.

The different talents, dispositions, and habits of men in society, being interesting to those who have to do with them, will in every language have general names; such as wise, foolish, knowing, ignorant, plain, cunning. In every operative art, the tools, instruments, materials, the work produced, and the various excellencies and defects of these, must have general names.

The various relations of persons, and of things which cannot escape the observation of men in society, lead

us to many complex general notions; such as father, brother, friend, enemy, master, servant, property, theft, rebellion.

The terms of art in the sciences make another class of general names of complex notions; as in mathematics, axiom, definition, problem, theorem, demonstration.

I do not attempt a complete enumeration even of the classes of complex general conceptions. These I have named as a specimen, I think, are mostly comprehended under what Mr. Locke calls mixed modes and relations; which, he justly observes, have names given them in language, in preference to innumerable others that might be formed, for this reason only, that they are useful for the purpose of communicating our thoughts by language.

In all the languages of mankind, not only the writings and discourses of the learned, but the conversation of the vulgar, is almost entirely made up of general words, which are the signs of general conceptions, either simple or complex. And in every language we find the terms signifying complex notions to be such, and only such, as the use of language requires.

There remains a very large class of complex general terms, on which I shall make some observations, I mean those by which we name the species, genera, and tribes of natural substances.

It is utility, indeed, that leads us to give general names to the various species of natural substances; but, in combining the attributes which are included under the specific name, we are more aided and directed by nature than in forming other combinations of mixed modes and relations. In the last, the ingredients are brought together in the occurrences of life, or in the actions or thoughts of man. But, in the first, the ingredients are united by nature in many individual substances which God has made. We form a general

notion of those attributes, wherein many individuals agree. We give a specific name to this combination; which name is common to all substances having those attributes, which either do or may exist. The specific name comprehends neither more nor fewer attributes than we find proper to put into its definition. It comprehends not time, nor place, nor even existence, although there can be no individual without these.

This work of the understanding is absolutely necessary for speaking intelligibly of the productions of nature, and for reaping the benefits we receive, and avoiding the dangers we are exposed to from them. The individuals are so many, that to give a proper name to each would be beyond the power of language. If a good or bad quality was observed in an individual, of how small use would this be, if there was not a species in which the same quality might be expected.

Without some general knowledge of the qualities of natural substances, human life could not be preserved. And there can be no general knowledge of this kind, without reducing them to species under specific names. For this reason, among the rudest nations, we find names for fire, water, earth, air, mountains, fountains, rivers; for the kinds of vegetables they use; of animals they hunt or tame, or that are found useful or hurtful.

Each of those names signifies in general a substance having a certain combination of attributes. The name therefore must be common to all substances in which those attributes are found.

Such general names of substances being found in all vulgar languages, before philosophers began to make accurate divisions, and less obvious distinctions, it is not to be expected that their meaning should be more precise than is necessary for the common purposes of life.

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As the knowledge of nature advances, more species of natural substances are observed, and their useful qualities discovered. In order that this important part of human knowledge may be communicated, and handed down to future generations, it is not sufficient that the species have names. Such is the fluctuating state of language, that a general name will not always retain the same precise signification, unless it have a definition in which men are disposed to acquiesce.

There was undoubtedly a great fund of natural knowledge among the Greeks and Romans in the time of Pliny. There is a great fund in his Natural History; but much of it is lost to us, for this reason among others, that we know not what species of substance he means by such a name.

Nothing could have prevented this loss but an accurate definition of the name, by which the species might have been distinguished from all others, as long as that name and its definition remained.

To prevent such loss in future times, modern philosophers have very laudably attempted to give names and accurate definitions of all the known species of substances, wherewith the beautiful Creator has enriched our globe.

This is necessary, in order to form a copious and distinct language concerning them, and consequently to facilitate our knowledge of them, and to convey it to future generations.

Every species that is known to exist ought to have a name; and that name ought to be defined by such attributes as serve best to distinguish the species from all others.

Nature invites to this work, by having formed things so as to make it both easy and important.

For, *first*, We perceive numbers of individual substances so like in their obvious qualities, that the most

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unimproved tribes of men consider them as of one species, and give them one common name.

Secondly, The more latent qualities of substances are generally the same in all the individuals of a species: so that what, by observation or experiment, is found in a few individuals of a species, is presumed, and commonly found to belong to the whole. By this we are enabled, from particular facts, to draw general conclusions. This kind of induction is indeed the master key to the knowledge of nature, without which we could form no general conclusions in that branch of philosophy.

And, *thirdly*, By the very constitution of our nature, we are led, without reasoning, to ascribe to the whole species what we have found to belong to the individuals. It is thus we come to know that fire burns, and water drowns; that bodies gravitate, and bread nourishes.

The species of two of the kingdoms of nature, to wit, the animal and the vegetable, seem to be fixed by nature, by the power they have of producing their like. And in these, men in all ages and nations have accounted the parent and the progeny of the same species. The differences among naturalists, with regard to the species of these two kingdoms, are very inconsiderable, and may be occasioned by the changes produced by soil, climate, and culture, and sometimes by monstrous productions, which are comparatively rare.

In the inanimate kingdom we have not the same means of dividing things into species, and therefore the limits of species seem to be more arbitrary. But from the progress already made, there is ground to hope, that even in this kingdom, as the knowledge of it advances, the various species may be so well distinguished and defined as to answer every valuable purpose.

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When the species are so numerous as to burden the memory, it is greatly assisted by distributing them into *genera;* the *genera* into tribes, the tribes into orders, and the orders into classes.

Such a regular distribution of natural substances, by divisions and subdivisions, has got the name of a system.

It is not a system of truths, but a system of general terms, with their definitions; and it is not only a great help to memory, but facilitates very much the definition of the terms. For the definition of the genus is common to all the species of that genus, and so is understood in the definition of each species, without the trouble of repetition. In like manner, the definition of a tribe is understood in the definition of every genus, and every species of that tribe; and the same may be said of every superior division.

The effect of such a systematical distribution of the productions of nature, is seen in our systems of zoology, botany, and mineralogy; in which a species is commonly defined accurately in a line or two, which, without the systematical arrangement, could hardly be defined in a page.

With regard to the utility of systems of this kind, men have gone into contrary extremes; some have treated them with contempt, as a mere dictionary of words; others, perhaps, rest in such systems, as all that is worth knowing in the works of nature.

On the one hand, it is not the intention of such systems to communicate all that is known of the natural productions which they describe. The properties most fit for defining and distinguishing the several species, are not always those that are most useful to be known. To discover and to communicate the uses of natural substances in life and in the arts, is

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no doubt that part of the business of a naturalist which is the most important; and the systematical arrangement of them is chiefly to be valued for its subserviency to this end. This every judicious naturalist will grant.

But, on the other hand, the labour is not to be despised, by which the road to an useful and important branch of knowledge is made easy in all time to come; especially when this labour requires both extensive knowledge and great abilities.

The talent of arranging properly, and defining accurately, is so rare, and at the same time so useful, that it may very justly be considered as a proof of real genius, and as entitled to a high degree of praise. There is an intrinsic beauty in arrangement, which captivates the mind, and gives pleasure, even abstracting from its utility; as in most other things, so in this particularly, nature has joined beauty with utility. The arrangement of an army in the day of battle is a grand spectacle. The same men crowded in a fair, have no such effect. It is not more strange therefore that some men spend their days in studying systems of nature, than that other men employ their lives in the study of languages. The most important end of those tystems, surely, is to form a copious and an unambiguous language concerning the productions of nature, by which every useful discovery concerning them may be communicated to the present, and transmitted to all future generations, without danger of mistake.

General terms, especially such as are complex in their signification, will never keep one precise meaning without accurate definition; and accurate definitions of such terms can in no way be formed so easily and advantageously, as by reducing the things they signify into a regular system.

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Very eminent men in the medical profession, in order to remove all ambiguity in the names of diseases, and to advance the healing art, have of late attempted to reduce into a systematical order, the diseases of the human body, and to give distinct names, and accurate definitions, of the several species, *genera*, orders, and classes, into which they distribute them; and I apprehend, that in every art and science, where the terms of the art have any ambiguity that obstructs its progress, this method will be found the easiest and most successful for the remedy of that evil.

It were even to be wished, that the general terms which we find in common language, as well as those of the arts and sciences, could be reduced to a systematical arrangement, and defined so as that they might be free from ambiguity; but perhaps the obstacles to this are insurmountable. I know no man who has attempted it but Bishop Wilkins in his Essay toward a real character and a philosophical language. The attempt was grand, and worthy of a man of genius.

The formation of such systems, therefore, of the various productions of nature, instead of being despised, ought to be ranked among the valuable improvements of modern ages; and to be the more esteemed that its utility reaches to the most distant future times, and, like the invention of writing, serves to embalm a most important branch of human knowledge, and to preserve it from being corrupted or lost.

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CHAP. V.

OBSERVATIONS CONCERNING THE NAMES GIVEN TO OUR GENERAL NOTIONS.

HAVING now explained, as well as I am able, those operations of the mind by which we analyze the objects which nature presents to our observation, into their simple attributes, giving a general name to each, and by which we combine any number of such attributes into one whole, and give a general name to that combination, I shall offer some observations relating to our general notions, whether simple or complex.

I apprehend that the names given to them by modern philosophers have contributed to darken our speculations about them, and to render them difficult and abstruse.

We call them general notions, conceptions, ideas. The words *notion* and *conception*, in their proper and most common sense, signify the act or operation of the mind in conceiving an object. In a figurative sense, they are sometimes put for the object conceived. And I think they are rarely, if ever, used in this figurative sense, except when we speak of what we call general notions or general conceptions. The word idea, as it is used in modern times, has the same ambiguity.

Now, it is only in the last of these senses, and not in the first, that we can be said to have general notions or conceptions. The generality is in the object conceived, and not in the act of the mind by which it is conceived. Every act of the mind is an individual act, which does or did exist. But we have power to conceive things which neither do nor ever did exist. We have power to conceive attributes without regard

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to their existence. The conception of such an attribute is a real and individual act of the mind; but the attribute conceived is common to many individuals that do or may exist. We are too apt to confound an object of conception with the conception of that object. But the danger of doing this must be much greater when the object of conception is called a conception.

The Peripatetics gave to such objects of conception the names of universals, and of predicables. Those names had no ambiguity, and I think were much more fit to express what was meant by them than the names we use.

It is for this reason that I have so often used the word attribute, which has the same meaning with predicable. And for the same reason, I have thought it necessary repeatedly to warn the reader, that when, in compliance with custom, I speak of general notions or general conceptions, I always mean things conceived, and not the act of the mind in conceiving them.

The Pythagoreans and Platonists gave the name of *ideas* to such general objects of conception, and to nothing else. As we borrowed the word idea from them, so that it is now familiar in all the languages of Europe, I think it would have been happy if we had also borrowed their meaning, and had used it only to signify what they meant by it. I apprehend we want an unambiguous word to distinguish things barely conceived from things that exist. If the word *idea* was used for this purpose only, it would be restored to its original meaning, and supply that want.

We may surely agree with the Platonists in the meaning of the word *idea*, without adopting their theory concerning ideas. We need not believe, with them, that ideas are eternal and self-existent, and that they have a more real existence than the things we see and feel.

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They were led to give existence to ideas, from the common prejudice, that every thing which is an object of conception must really exist; and having once given existence to ideas, the rest of their mysterious system about ideas followed of course; for things merely conceived, have neither beginning nor end, time nor place; they are subject to no change; they are the patterns and exemplars according to which the Deity made every thing that he made; for the work must be conceived by the artificer before it is made.

These are undeniable attributes of the ideas of Plato, and if we add to them that of real existence, we have the whole mysterious system of Platonic ideas. Take away the attribute of existence, and suppose them not to be things that exist, but things that are barely conceived, and all the mystery is removed; all that remains is level to the human understanding.

The word *essence* came to be much used among the schoolmen, and what the Platonists called the idea of a species, they called its essence. The word *essentia* is said to have been made by Cicero; but even his authority could not give it currency, until long after his time. It came at last to be used, and the schoolmen fell into much the same opinions concerning essences, as the Platonists held concerning ideas. The essences of things were held to be uncreated, eternal, and immutable.

Mr. Locke distinguishes two kinds of essence, the real and the nominal. By the real essence he means the constitution of an individual, which makes it to be what it is. This essence must begin and end with the individual to which it belongs. It is not therefore a Platonic idea. But what Mr. Locke calls the nominal essence, is the constitution of a species, or that which makes an individual to be of such a species; and this is nothing but that combination of attributes which is

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signified by the name of the species, and which we conceive without regard to existence.

The essence of a species therefore is what the Platonists called the idea of the species.

If the word *idea* be restricted to the meaning which it bore among the Platonists and Pythagoreans, many things which Mr. Locke has said with regard to ideas will be just and true, and others will not.

It will be true, that most words, indeed all general words, are the signs of ideas; but proper names are not; they signify individual things, and not ideas. It will be true, not only that there are general and abstract ideas, but that all ideas are general and abstract. It will be so far from the truth, that all our simple ideas are got immediately, either from sensation, or from consciousness; that no simple idea is got by either, without the co-operation of other powers. The objects of sense, of memory, and of consciousness, are not ideas but individuals; they must be analyzed by the understanding into their simple ingredients, before we can have simple ideas; and those simple ideas must be again combined by the understanding, in distinct parcels with names annexed, in order to give us complex ideas. It will be probable, not only that brutes have no abstract ideas, but they have no ideas at all.

I shall only add, that the learned author of the Origin and Progress of Language, and perhaps his learned friend Mr. Harris, are the only modern authors I have met with, who restrict the word *idea* to this meaning. Their acquaintance with ancient philosophy led them to this. What pity is it that a word, which in ancient philosophy had a distinct meaning, and which if kept to that meaning, would have been a real acquisition to our language, should be used by the moderns in so vague and ambiguous a manner, that it is more apt to perplex and darken our speculations, than to convey useful knowledge.

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From all that has been said about abstract and general conceptions, I think we may draw the following conclusions concerning them.

1st, That it is by abstraction that the mind is furnished with all its most simple, and most distinct notions. The simplest objects of sense appear both complex and indistinct, until by abstraction they are analyzed into their more simple elements; and the same may be said of the objects of memory and of consciousness.

2dly, Our most distinct complex notions are those that are formed by compounding the simple notions got by abstraction.

3dly, Without the powers of abstracting and generalizing, it would be impossible to reduce things into any order and method, by dividing them into genera and species.

4thly, Without those powers there could be no definition; for definition can only be applied to universals, and no individual can be defined.

5thly, Without abstract and general notions there can neither be reasoning nor language.

6thly, As brute animals show no signs of being able to distinguish the various attributes of the same subject; of being able to class things into genera and species; to define, to reason, or to communicate their thoughts by artificial signs, as men do; I must think with Mr. Locke, that they have not the powers of abstracting and generalizing; and that in this particular, nature has made a specific difference between them and the human species.

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CHAP. VI.

OPINIONS OF PHILOSOPHERS ABOUT UNIVERSALS.

In the ancient philosophy, the doctrine of universals, that is, of things which we express by general terms, makes a great figure. The ideas of the Pythagoreans and Platonists, of which so much has been already said, were universals. All science is employed about universals as its object. It was thought that there can be no science, unless its object be something real and immutable; and therefore those who paid homage to truth and science, maintained that ideas, or universals, have a real and immutable existence.

The skeptics, on the contrary, for there were skeptical philosophers in those early days, maintained, that all things are mutable, and in a perpetual fluctuation; and from this principle inferred, that there is no science, no truth; that all is uncertain opinion.

Plato, and his masters of the Pythagorean school, yielded this with regard to objects of sense, and acknowledged that there could be no science or certain knowledge concerning them: but they held, that there are objects of intellect of a superior order and nature, which are permanent and immutable. These are ideas, or universal natures, of which the objects of sense are only the images and shadows.

To these ideas they ascribed, as I have already observed, the most magnificent attributes. Of man, of a rose, of a circle, and of every species of things, they believed that there is one idea or form, which existed from eternity, before any individual of the species was formed: that this idea is the exemplar or pattern, according to which the Deity formed the individuals of the species: that every individual of the species par-

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ticipates of this idea, which constitutes its essence; and that this idea is likewise an object of the human intellect, when, by due abstraction, we discern it to be one in all the individuals of the species.

Thus the idea of every species, though one and immutable, might be considered in three different views or respects; 1st, as having an eternal existence before there was any individual of the species; 2dly, as existing in every individual of that species, without division or multiplication, and making the essence of the species; and, 3dly, as an object of intellect and of science in man.

Such I take to be the doctrine of Plato, as far as I am able to comprehend it. His disciple Aristotle rejected the first of these views of ideas as visionary, but differed little from his master with regard to the two last. He did not admit the existence of universal natures antecedent to the existence of individuals; but he held, that every individual consists of matter and form: that the form, which I take to be what Plato calls the idea, is common to all the individuals of the species, and that the human intellect is fitted to receive the forms of things as objects of contemplation. Such profound speculations about the nature of universals, we find even in the first ages of philosophy. I wish I could make them more intelligible to myself and to the reader.

The division of universals into five classes; to wit, genus, species, specific difference, properties, and accidents, is likewise very ancient, and I conceive was borrowed by the Peripatetics from the Pythagorean school.

Porphyry has given us a very distinct treatise upon these, as an introduction to Aristotle's categories. But he has omitted the intricate metaphysical questions that were agitated about their nature; such as, Whether genera and species do really exist in nature? Or,

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Whether they are only conceptions of the human mind? If they exist in nature, Whether they are corporeal or incorporeal? And whether they are inherent in the objects of sense, or disjoined from them? These questions he tells us, for brevity's sake, he omits, because they are very profound, and require accurate discussion. It is probable, that these questions exercised the wits of the philosophers till about the twelfth century.

About that time, Roscelinus or Ruscelinus, the master of the famous Abelard, introduced a new doctrine, that there is nothing universal but words or names. For this, and other heresies, he was much persecuted. However, by his eloquence and abilities, and those of his disciple Abelard, the doctrine spread, and those who followed it were called Nominalists. His antagonists, who held that there are things that are really universal, were called Realists. The scholastic philosophers, from the beginning of the twelfth century, were divided into these two sects. Some few took a middle road between the contending parties. That universality, which the Realists held to be in things themselves, Nominalists in names only, they held to be neither in things nor in names only, but in our conceptions. On this account they were called Conceptualists: but being exposed to the batteries of both the opposite parties, they made no great figure.

When the sect of Nominalists was like to expire, it received new life and spirit from Occam, the disciple of Scotus, in the fourteenth century. Then the dispute about universals, *a parte rei*, was revived with the greatest animosity in the schools of Britain, France, and Germany, and carried on, not by arguments only, but by bitter reproaches, blows, and bloody affrays, until the doctrines of Luther and the other reformers, turned the attention of the learned world to more important subjects.

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After the revival of learning, Mr. Hobbes adopted the opinion of the Nominalists. Human Nature, chap. 5. sect. 6. "It is plain, therefore," says he, "that there is nothing universal but names." And in his Leviathan, part 1. chap. 4. "There being nothing universal but names, proper names bring to mind one thing only; universals recal any one of many."

Mr. Locke, according to the division before mentioned, I think, may be accounted a Conceptualist. He does not maintain that there are things that are universal; but that we have general, or universal ideas which we form by abstraction; and this power of forming abstract and general ideas, he conceives to be that which makes the chief distinction in point of understanding between men and brutes.

Mr. Locke's doctrine about abstraction has been combated by two very powerful antagonists, bishop Berkeley and Mr. Hume, who have taken up the opinion of the Nominalists. The former thinks, "That the opinion, that the mind has a power of forming abstract ideas, or notions of things, has had a chief part in rendering speculation intricate and perplexed, and has occasioned innumerable errors and difficulties in almost all parts of knowledge." That "abstract ideas are like a fine and subtile net, which has miserably perplexed and entangled the minds of men, with this peculiar circumstance, that by how much the finer and more curious was the wit of any man, by so much the deeper was he like to be ensnared, and faster held therein." That "among all the false principles that have obtained in the world, there is none has a more wide influence over the thoughts of speculative men than this of abstract general ideas."

The good bishop therefore, in twenty-four pages of the introduction to his Principles of Human Knowledge, encounters this principle with a zeal proportion-

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ed to his apprehension of its malignant and extensive influence.

That the zeal of the skeptical philosopher against abstract ideas was almost equal to that of the bishop, appears from his words, Treatise of Human Nature, book 1. part 1. sect. 7. "A very material question has been started concerning abstract or general ideas, whether they be general or particular in the mind's conception of them? A great philosopher (he means Dr. Berkeley) has disputed the received opinion in this particular, and has asserted, that all general ideas are nothing but particular ones annexed to a certain term, which gives them a more extensive signification, and makes them recal upon occasion other individuals which are similar to them. As I look upon this to be one of the greatest and most valuable discoveries that have been made of late years in the republic of letters, I shall here endeavour to confirm it by some arguments, which, I hope, will put it beyond all doubt and controversy."

I shall make an end of this subject, with some reflections on what has been said upon it by these two eminent philosophers.

1. *First*, I apprehend that we cannot, with propriety, be said to have abstract and general ideas, either in the popular or in the philosophical sense of that word. In the popular sense an idea is a thought: it is the act of the mind in thinking, or in conceiving any object. This act of the mind is always an individual act, and therefore there can be no general idea in this sense. In the philosophical sense, an idea is an image in the mind, or in the brain, which, in Mr. Locke's system is the immediate object of thought; in the system of Berkeley and Hume the only object of thought. I believe there are no ideas of this kind, and therefore no abstract general ideas. Indeed, if there were really such images in the mind, or in the brain, they could

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not be general, because every thing that really exists is an individual. Universals are neither acts of the mind, nor images in the mind.

As therefore there are no general ideas in either of the senses in which the word *idea* is used by the moderns, Berkeley and Hume have in this question an advantage over Mr. Locke; and their arguments against him are good *ad hominem*. They saw farther than he did into the just consequences of the hypothesis concerning ideas, which was common to them and to him; and they reasoned justly from this hypothesis, when they concluded from it, that there is neither a material world, nor any such power in the human mind as that of abstraction.

A triangle, in general, or any other universal, might be called an idea by a Platonist; but, in the style of modern philosophy, it is not an idea, nor do we ever ascribe to ideas the properties of triangles. It is never said of any idea, that it has three sides and three angles. We do not speak of equilateral, isosceles, or scalene ideas, nor of right angled, acute angled, or obtuse angled ideas. And if these attributes do not belong to ideas, it follows necessarily, that a triangle is not an idea. The same reasoning may be applied to every other universal.

Ideas are said to have a real existence in the mind, at least, while we think of them; but universals have no real existence. When we ascribe existence to them, it is not an existence in time or place, but existence in some individual subject; and this existence means no more but that they are truly attributes of such a subject. Their existence is nothing but predicability, or the capacity of being attributed to a subject. The name of predicables, which was given them in ancient philosophy, is that which most properly expresses their nature.

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2. I think it must be granted, in the *second* place, that universals cannot be the objects of imagination, when we take that word in its strict and proper sense. "I find," says Berkeley, "I have a faculty of imagining or representing to myself the ideas of those particular things I have perceived, and of variously compounding and dividing them. I can imagine a man with two heads, or the upper parts of a man joined to the body of a horse. I can imagine the hand, the eye, the nose, each by itself, abstracted or separated from the rest of the body. But then, whatever hand or eye I imagine, it must have some particular shape or colour. Likewise, the idea of a man that I frame to myself must be either of a white, or a black, or a tawny, a straight, or a crooked, a tall, or a low, or a middle sized man."

I believe every man will find in himself what this ingenious author found, that he cannot imagine a man without colour, or stature, or shape.

Imagination, as we before observed, properly signifies a conception of the appearance an object would make to the eye, if actually seen. An universal is not an object of any external sense, and therefore cannot be imagined; but it may be distinctly conceived. When Mr. Pope says, "The proper study of mankind is man," I conceive his meaning distinctly, though I neither imagine a black, or a white, a crooked, or a straight man. The distinction between conception and imagination is real, though it be too often overlooked, and the words taken to be synonimous. I can conceive a thing that is impossible, but I cannot distinctly imagine a thing that is impossible. I can conceive a proposition or a demonstration, but I cannot imagine either. I can conceive understanding and will, virtue and vice, and other attributes of mind, but I cannot imagine them. In like manner, I can distinctly conceive universals, but I cannot imagine them.

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As to the manner how we conceive universals, I confess my ignorance. I know not how I hear, or see, or remember, and as little do I know how I conceive things that have no existence. In all our original faculties, the fabric and manner of operation is, I apprehend, beyond our comprehension, and perhaps is perfectly understood by him only who made them.

But we ought not to deny a fact of which we are conscious, though we know not how it is brought about. And I think we may be certain that universals are not conceived by means of images of them in our minds, because there can be no image of an universal.

3dly, It seems to me, that on this question Mr. Locke and his two antagonists have divided the truth between them. He saw very clearly, that the power of forming abstract and general conceptions is one of the most distinguishing powers of the human mind, and puts a specific difference between man and the brute creation. But he did not see that this power is perfectly irreconcileable to his doctrine concerning ideas.

His opponents saw this inconsistency; but, instead of rejecting the hypothesis of ideas, they explain away the power of abstraction, and leave no specific distinction between the human understanding, and that of brutes.

4thly, Berkeley, in his reasoning against abstract general ideas, seems unwilling or unwarily to grant all that is necessary to support abstract and general conceptions.

"A man," he says, "may consider a figure merely as triangular, without attending to the particular qualities of the angles, or relations of the sides. So far he may abstract. But this will never prove that he can frame an abstract general inconsistent idea of a triangle."

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If a man may consider a figure merely as triangular, he must have some conception of this object of his consideration: for no man can consider a thing which he does not conceive. He has a conception, therefore, of a triangular figure, merely as such. I know no more that is meant by an abstract general conception of a triangle.

He that considers a figure merely as triangular, must understand what is meant by the word *triangular*. If to the conception he joins to this word, he adds any particular quality of angles or relation of sides, he misunderstands it, and does not consider the figure merely as triangular. Whence I think it is evident, that he who considers a figure merely as triangular must have the conception of a triangle, abstracting from any quality of angles or relation of sides.

The bishop, in like manner, grants, "That we may consider Peter so far forth as man, or so far forth as animal, without framing the forementioned abstract idea, in as much as all that is perceived is not considered." It may here be observed, that he who considers Peter so far forth as man, or so far forth as animal, must conceive the meaning of those abstract general words *man* and *animal*, and he who conceives the meaning of them, has an abstract general conception.

From these concessions, one would be apt to conclude that the bishop thinks that we can abstract, but that we cannot frame abstract ideas; and in this I should agree with him. But I cannot reconcile his concessions with the general principle he lays down before. "To be plain," says he, "I deny that I can abstract one from another, or conceive separately those qualities which it is impossible should exist so separated." This appears to me inconsistent with the concessions above mentioned, and inconsistent with experience.

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If we can consider a figure merely as triangular, without attending to the particular quality of the angles or relation of the sides, this, I think, is conceiving separately things which cannot exist so separated: for surely a triangle cannot exist without a particular quality of angles and relation of sides. And it is well known from experience, that a man may have a distinct conception of a triangle, without having any conception or knowledge of many of the properties without which a triangle cannot exist.

Let us next consider the bishop's notion of generalizing. He does not absolutely deny that there are general ideas, but only that there are abstract general ideas. "An idea," he says, "which, considered in itself, is particular, becomes general, by being made to represent or stand for all other particular ideas of the same sort. To make this plain by an example, suppose a geometrician is demonstrating the method of cutting a line in two equal parts. He draws, for instance, a black line of an inch in length. This, which is in itself a particular line, is nevertheless, with regard to its signification, general; since, as it is there used, it represents all particular lines whatsoever; so that what is demonstrated of it, is demonstrated of all lines, or, in other words, of a line in general. And as that particular line becomes general by being made a sign, so the name *line*, which, taken absolutely, is particular, by being a sign, is made general."

Here I observe, that when a particular idea is made a sign to represent and stand for all of a sort, this supposes a distinction of things into sorts or species. To be of a sort implies having those attributes which characterize the sort, and are common to all the individuals that belong to it. There cannot, therefore, be a sort without general attributes, nor can there be any conception of a sort without a conception of those gen-

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eral attributes which distinguish it. The conception of a sort, therefore, is an abstract general conception.

The particular idea cannot surely be made a sign of a thing of which we have no conception. I do not say that you must have an idea of the sort, but surely you ought to understand or conceive what it means, when you make a particular idea a representative of it, otherwise your particular idea represents, you know not what.

When I demonstrate any general property of a triangle, such as, that the three angles are equal to two right angles, I must understand or conceive distinctly what is common to all triangles. I must distinguish the common attributes of all triangles from those wherein particular triangles may differ. And if I conceive distinctly what is common to all triangles, without confounding it with what is not so, this is to form a general conception of a triangle. And without this, it is impossible to know that the demonstration extends to all triangles.

The bishop takes particular notice of this argument, and makes this answer to it. "Though the idea I have in view, whilst I make the demonstration be, for instance, that of an isosceles rectangular triangle, whose sides are of a determinate length, I may nevertheless be certain that it extends to all other rectilinear triangles, of what sort or bigness soever; and that because neither the right angle, nor the equality or determinate length of the sides, are at all concerned in the demonstration."

But if he do not, in the idea he has in view, clearly distinguish what is common to all triangles from what is not, it would be impossible to discern whether something that is not common be concerned in the demonstration or not. In order, therefore, to perceive that the demonstration extends to all triangles, it is necessary to have a distinct conception of what is common

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to all triangles, excluding from that conception all that is not common. And this is all I understand by an abstract general conception of a triangle.

Berkeley catches an advantage to his side of the question, from what Mr. Locke expresses, too strongly indeed, of the difficulty of framing abstract general ideas, and the pains and skill necessary for that purpose. From which the bishop infers, that a thing so difficult cannot be necessary for communication by language, which is so easy and familiar to all sorts of men.

There may be some abstract and general conceptions that are difficult, or even beyond the reach of persons of weak understanding; but there are innumerable, which are not beyond the reach of children. It is impossible to learn language without acquiring general conceptions; for there cannot be a single sentence without them. I believe the forming these, and being able to articulate the sounds of language, make up the whole difficulty that children find in learning language at first.

But this difficulty, we see, they are able to overcome so early as not to remember the pains it cost them. They have the strongest inducement to exert all their labour and skill, in order to understand, and to be understood; and they no doubt do so.

The labour of forming abstract notions, is the labour of learning to speak, and to understand what is spoken. As the words of every language, excepting a few proper names, are general words, the minds of children are furnished with general conceptions, in proportion as they learn the meaning of general words. I believe most men have hardly any general notions but those which are expressed by the general words they hear and use in conversation. The meaning of some of these is learned by a definition, which at once conveys a distinct and accurate general conception. The

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meaning of other general words we collect, by a kind of induction, from the way in which we see them used on various occasions, by those who understand the language. Of these our conception is often less distinct, and in different persons is perhaps not perfectly the same.

"Is it not a hard thing," says the bishop, "that a couple of children cannot prate together of their sugar-plums and rattles, and the rest of their little trinkets, till they have first tacked together numberless inconsistencies, and so formed in their minds abstract general ideas, and annexed them to every common name they make use of."

However hard a thing it may be, it is an evident truth, that a couple of children, even about their sugar-plums and their rattles, cannot prate so as to understand, and be understood, until they have learned to conceive the meaning of many general words, and this, I think, is to have general conceptions.

5thly, Having considered the sentiments of Bishop Berkeley on this subject, let us next attend to those of Mr. Hume, as they are expressed, part 1. sect. 7. Treatise of Human Nature. He agrees perfectly with the bishop, "That all general ideas are nothing but particular ones annexed to a certain term, which gives them a more extensive signification, and makes them recal upon occasion other individuals which are similar to them. A particular idea becomes general, by being annexed to a general term; that is, to a term, which, from a customary conjunction, has a relation to many other particular ideas, and readily recals them in the imagination. Abstract ideas are therefore in themselves individual, however they may become general in their representation. The image in the mind is only that of a particular object, though the application of it in our reasoning be the same as if it was universal."

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Although Mr. Hume looks upon this to be one of the greatest and most valuable discoveries that has been made of late years in the republic of letters, it appears to be no other than the opinion of the Nominalists, about which so much dispute was held from the beginning of the twelfth century down to the reformation, and which was afterward supported by Mr. Hobbes. I shall briefly consider the arguments, by which Mr. Hume hopes to have put it beyond all doubt and controversy.

1st, He endeavours to prove, by three arguments, that it is utterly impossible to conceive any quantity or quality, without forming a precise notion of its degrees.

This is indeed a great undertaking; but if he could prove it, it is not sufficient for his purpose; for two reasons.

1st, Because there are many attributes of things, besides quantity and quality; and it is incumbent upon him to prove, that it is impossible to conceive any attribute, without forming a precise notion of its degree. Each of the ten categories of Aristotle is a genus, and may be an attribute: and if he should prove of two of them, to wit, quantity and quality, that there can be no general conception of them, there remain eight behind, of which this must be proved.

The other reason is, because though it were impossible to conceive any quantity or quality, without forming a precise notion of its degree, it does not follow that it is impossible to have a general conception even of quantity and quality. The conception of a pound troy is the conception of a quantity, and of the precise degree of that quantity; but it is an abstract general conception notwithstanding, because it may be the attribute of many individual bodies, and of many kinds of bodies. He ought therefore to have proved, that we cannot conceive quantity or quality, or any other at-

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tribute, without joining it inseparably to some individual subject.

This remains to be proved, which will be found no easy matter. For instance, I conceive what is meant by a Japanese as distinctly as what is meant by an Englishman or a Frenchman. It is true, a Japanese is neither quantity nor quality, but it is an attribute common to every individual of a populous nation. I never saw an individual of that nation, and, if I can trust my consciousness, the general term does not lead me to imagine one individual of the sort as a representative of all others.

Though Mr. Hume, therefore, undertakes much, yet, if he could prove all he undertakes to prove, it would by no means be sufficient to show that we have no abstract general conceptions.

Passing this, let us attend to his arguments for proving this extraordinary position, that it is impossible to conceive any quantity or quality, without forming a precise notion of its degree.

The first argument is, that it is impossible to distinguish things that are not actually separable. "The precise length of a line is not different or distinguishable from the line."

I have before endeavoured to show, that things inseparable in their nature may be distinguished in our conception. And we need go no farther to be convinced of this, than the instance here brought to prove the contrary. The precise length of a line, he says, is not distinguishable from the line. When I say, *this is a line*, I say and mean one thing. When I say *it is a line of three inches*, I say and mean another thing. If this be not to distinguish the precise length of the line from the line, I know not what it is to distinguish.

Second argument. "Every object of sense, that is, every impression, is an individual, having its de-

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terminate degrees of quantity and quality: but whatever is true of the impression is true of the idea, as they differ in nothing but their strength and vivacity."

The conclusion in this argument is indeed justly drawn from the premises. If it be true that ideas differ in nothing from objects of sense but in strength and vivacity, as it must be granted that all the objects of sense are individuals, it will certainly follow that all ideas are individuals. Granting therefore the justness of this conclusion, I beg leave to draw two other conclusions from the same premises, which will follow no less necessarily.

1st, If ideas differ from the object of sense only in strength and vivacity, it will follow, that the idea of a lion is a lion of less strength and vivacity. And hence may arise a very important question, Whether the idea of a lion may not tear in pieces and devour the ideas of sheep, oxen, and horses, and even of men, women, and children?

2dly, If ideas differ only in strength and vivacity from the objects of sense, it will follow, that objects, merely conceived, are not ideas; for such objects differ from the objects of sense in respects of a very different nature from strength and vivacity. Every object of sense must have a real existence, and time and place: but things merely conceived may neither have existence, nor time nor place; and therefore, though there should be no abstract ideas, it does not follow, that things abstract and general may not be conceived.

The third argument is this: "It is a principle generally received in philosophy, that every thing in nature is individual; and that it is utterly absurd to suppose a triangle really existent, which has no precise proportion of sides and angles. If this, there-

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fore, be absurd in fact and reality, it must be absurd in idea, since nothing of which we can form a clear and distinct idea is absurd or impossible."

I acknowledge it to be impossible, that a triangle should really exist which has no precise proportion of sides and angles; and impossible that any being should exist which is not an individual being; for I think, a being and an individual being mean the same thing: but that there can be no attributes common to many individuals, I do not acknowledge. Thus, to many figures that really exist, it may be common that they are triangles; and to many bodies that exist, it may be common that they are fluid. Triangle and fluid are not beings, they are attributes of beings.

As to the principle here assumed, that nothing of which we can form a clear and distinct idea is absurd or impossible, I refer to what was said upon it, chap. 3. Essay 4. It is evident, that in every mathematical demonstration, *ad absurdum*, of which kind almost one half of mathematics consists, we are required to suppose, and consequently to conceive a thing that is impossible. From that supposition we reason, until we come to a conclusion that is not only impossible but absurd. From this we infer, that the proposition supposed at first is impossible, and therefore that its contradictory is true.

As this is the nature of all demonstrations *ad absurdum*, it is evident, I do not say that we can have a clear and distinct idea, but that we can clearly and distinctly conceive things impossible.

The rest of Mr. Hume's discourse upon this subject is employed in explaining how an individual idea, annexed to a general term, may serve all the purposes in reasoning, which have been ascribed to abstract general ideas.

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"When we have found a resemblance among several objects that often occur to us, we apply the same name to all of them, whatever differences we may observe in the degrees of their quantity and quality, and whatever other differences may appear among them. After we have acquired a custom of this kind, the hearing of that name revives the idea of one of these objects, and makes the imagination conceive it, with all its circumstances and proportions." But along with this idea, there is a readiness to survey any other of the individuals to which the name belongs, and to observe, that no conclusion be formed contrary to any of them. If any such conclusion is formed, those individual ideas which contradict it, immediately crowd in upon us, and make us perceive the falsehood of the proposition. If the mind suggest not always these ideas upon occasion, it proceeds from some imperfection in its faculties; and such a one as is often the source of false reasoning and sophistry.

This is in substance the way in which he accounts for what he calls "the foregoing paradox, that some ideas are particular in their nature, but general in their representation." Upon this account I shall make some remarks.

1st, He allows that we find a resemblance among several objects, and such a resemblance as leads us to apply the same name to all of them. This concession is sufficient to show that we have general conceptions. There can be no resemblance in objects that have no common attribute; and if there be attributes belonging in common to several objects, and in man a faculty to observe and conceive these, and to give names to them, this is to have general conceptions.

I believe indeed we may have an indistinct perception of resemblance, without knowing wherein it lies. Thus, I may see a resemblance between one face and

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another, when I cannot distinctly say in what feature they resemble: but by analyzing the two faces, and comparing feature with feature, I may form a distinct notion of that which is common to both. A painter, being accustomed to an analysis of this kind, would have formed a distinct notion of this resemblance at first sight; to another man it may require some attention.

There is therefore an indistinct notion of resemblance when we compare the objects only in gross; and this I believe brute animals may have. There is also a distinct notion of resemblance, when we analyze the objects into their different attributes, and perceive them to agree in some, while they differ in others. It is in this case only that we give a name to the attributes wherein they agree, which must be a common name, because the thing signified by it is common. Thus, when I compare cubes of different matter, I perceive them to have this attribute in common, that they are comprehended under six equal squares; and this attribute only, is signified by applying the name of *cube* to them all. When I compare clean linen with snow, I perceive them to agree in colour; and when I apply the name of white to both, this name signifies neither snow nor clean linen, but the attribute which is common to both.

2dly, The author says, that when we have found a resemblance among several objects, we apply the same name to all of them.

It must here be observed, that there are two kinds of names which the author seems to confound, though they are very different in nature, and in the power they have in language. There are proper names, and there are common names, or appellatives. The first are the names of individuals. The same proper name is never applied to several individuals on account of

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their similitude, because the very intention of a proper name is to distinguish one individual from all others; and hence it is a maxim in grammar, that proper names have no plural number. A proper name signifies nothing but the individual, whose name it is; and when we apply it to the individual, we neither affirm nor deny any thing concerning him.

A common name or appellative is not the name of any individual, but a general term, signifying something that is, or may be common to several individuals. Common names therefore signify common attributes. Thus, when I apply the name of son or brother to several persons, this signifies and affirms that this attribute is common to all of them.

From this it is evident, that the applying the same name to several individuals, on account of their resemblance, can, in consistence with grammar and common sense, mean nothing else than the expressing by a general term something that is common to those individuals, and which therefore may be truly affirmed of them all.

3dly, The author says, "It is certain that we form the idea of individuals, whenever we use any general term. The word raises up an individual idea, and makes the imagination conceive it, with all its particular circumstances and proportions."

This fact he takes a great deal of pains to account for, from the effect of custom.

But the fact should be ascertained before we take pains to account for it. I can see no reason to believe the fact; and I think a farmer can talk of his sheep, and his black cattle, without conceiving in his imagination one individual, with all its circumstances and proportions. If this be true, the whole of his theory of general ideas falls to the ground. To me it appears, that when a general term is well understood, it is only

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by accident if it suggest some individual of the kind; but this effect is by no means constant.

I understand perfectly what mathematicians call a line of the fifth order; yet I never conceived in my imagination any one of the kind in all its circumstances and proportions. Sir Isaac Newton first formed a distinct general conception of lines of the third order; and afterward, by great labour and deep penetration, found out and described the particular species comprehended under that general term. According to Mr. Hume's theory, he must first have been acquainted with the particulars, and then have learned by custom, to apply one general name to all of them.

The author observes, "that the idea of an equilateral triangle of an inch perpendicular, may serve us in talking of a figure, a rectilinear figure, a regular figure, a triangle, and an equilateral triangle."

I answer, the man that uses these general terms, either understands their meaning, or he does not. If he does not understand their meaning, all his talk about them will be sound only without sense, and the particular idea mentioned cannot enable him to speak of them with understanding. If he understands the meaning of the general terms, he will find no use for the particular idea.

4thly, He tells us gravely, "That in a globe of white marble the figure and the colour are undistinguishable, and are in effect the same." How foolish have mankind been to give different names, in all ages and in all languages, to things undistinguishable, and in effect the same? Henceforth, in all books of science and of entertainment, we may substitute figure for colour, and colour for figure. By this we shall make numberless curious discoveries, without danger of error.

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ESSAY VI.

OF JUDGMENT.

CHAP. I.

OF JUDGMENT IN GENERAL.

JUDGING is an operation of the mind so familiar to every man who has understanding, and its name is so common and so well understood, that it needs no definition.

As it is impossible by a definition to give a notion of colour to a man who never saw colours; so it is impossible by any definition to give a distinct notion of judgment to a man who has not often judged, and who is not capable of reflecting attentively upon this act of his mind. The best use of a definition is to prompt him to that reflection; and without it the best definition will be apt to mislead him.

The definition commonly given of judgment, by the more ancient writers in logic, was, that it is an act of the mind, whereby one thing is affirmed or denied of another. I believe this is as good a definition of it as can be given. Why I prefer it to some later definitions, will afterward appear. Without pretending to give any other, I shall make two remarks upon it, and then offer some general observations on this subject.

1st, It is true, that it is by affirmation or denial that we express our judgments; but there may be judgment which is not expressed. It is a solitary act of

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the mind, and the expression of it by affirmation or denial is not at all essential to it. It may be tacit, and not expressed. Nay, it is well known that men may judge contrary to what they affirm or deny; the definition therefore must be understood of mental affirmation or denial, which indeed is only another name for judgment.

2dly, Affirmation and denial is very often the expression of testimony, which is a different act of the mind, and ought to be distinguished from judgment.

A judge asks of a witness what he knows of such a matter to which he was an eye or ear witness. He answers, by affirming or denying something. But his answer does not express his judgment; it is his testimony. Again, I ask a man his opinion in a matter of science or of criticism. His answer is not testimony; it is the expression of his judgment.

Testimony is a social act, and it is essential to it to be expressed by words or signs. A tacit testimony is a contradiction: but there is no contradiction in a tacit judgment; it is complete without being expressed.

In testimony, a man pledges his veracity for what he affirms; so that a false testimony is a lie: but a wrong judgment is not a lie; it is only an error.

I believe, in all languages, testimony and judgment are expressed by the same form of speech. A proposition affirmative or negative, with a verb in what is called the indicative mood, expresses both. To distinguish them by the form of speech, it would be necessary that verbs should have two indicative moods, one for testimony, and another to express judgment. I know not that this is found in any language. And the reason is, not surely that the vulgar cannot distinguish the two, for every man knows the difference between a lie and an error of judgment, but that, from the matter and circumstances, we can easily see whether a man in-

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tends to give his testimony, or barely to express his judgment.

Although men must have judged in many cases before tribunals of justice were erected, yet it is very probable that there were tribunals before men began to speculate about judgment, and that the word may be borrowed from the practice of tribunals. As a judge, after taking the proper evidence, passes sentence in a cause, and that sentence is called his judgment; so the mind, with regard to whatever is true or false, passes sentence, or determines according to the evidence that appears. Some kinds of evidence leave no room for doubt. Sentence is passed immediately, without seeking or hearing any contrary evidence, because the thing is certain and notorious. In other cases, there is room for weighing evidence on both sides before sentence is passed. The analogy between a tribunal of justice and this inward tribunal of the mind, is too obvious to escape the notice of any man who ever appeared before a judge. And it is probable, that the word *judgment*, as well as many other words we use in speaking of this operation of mind, are grounded on this analogy.

Having premised these things, that it may be clearly understood what I mean by judgment, I proceed to make some general observations concerning it.

1st, Judgment is an act of the mind specifically different from simple apprehension, or the bare conception of a thing. It would be unnecessary to observe this, if some philosophers had not been led by their theories to a contrary opinion.

Although there can be no judgment without a conception of the things about which we judge; yet conception may be without any judgment. Judgment can be expressed by a proposition only, and a proposition is a complete sentence; but simple apprehension

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may be expressed by a word or words, which make no complete sentence. When simple apprehension is employed about a proposition, every man knows that it is one thing to apprehend a proposition, that is, to conceive what it means; but it is quite another thing to judge it to be true or false.

It is self-evident, that every judgment must be either true or false; but simple apprehension or conception can neither be true nor false, as was shown before.

One judgment may be contradictory to another; and it is impossible for a man to have two judgments at the same time, which he perceives to be contradictory. But contradictory propositions may be conceived at the same time without any difficulty. That the sun is greater than the earth, and that the sun is not greater than the earth, are contradictory propositions. He that apprehends the meaning of one, apprehends the meaning of both. But it is impossible for him to judge both to be true at the same time. He knows that if the one is true, the other must be false. For these reasons, I hold it to be certain, that judgment and simple apprehension are acts of the mind specifically different.

2dly, There are notions or ideas that ought to be referred to the faculty of judgment as their source; because, if we had not that faculty, they could not enter into our minds; and to those that have that faculty, and are capable of reflecting upon its operations, they are obvious and familiar.

Among these we may reckon the notion of judgment itself; the notions of a proposition, of its subject, predicate, and copula; of affirmation and negation, of true and false, of knowledge, belief, disbelief, opinion, assent, evidence. From no source could we acquire these notions, but from reflecting upon our judgments. Relations of things make one great class of our no-

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tions or ideas; and we cannot have the idea of any relation without some exercise of judgment, as will appear afterward.

3dly, In persons come to years of understanding, judgment necessarily accompanies all sensation, perception by the senses, consciousness, and memory, but not conception.

I restrict this to persons come to the years of understanding, because it may be a question, whether infants, in the first period of life, have any judgment or belief at all. The same question may be put with regard to brutes and some idiots. This question is foreign to the present subject; and I say nothing here about it, but speak only of persons who have the exercise of judgment.

In them it is evident, that a man who feels pain, judges and believes that he is really pained. The man who perceives an object, believes that it exists, and is what he distinctly perceives it to be; nor is it in his power to avoid such judgment. And the like may be said of memory, and of consciousness. Whether judgment ought to be called a necessary concomitant of these operations, or rather a part or ingredient of them, I do not dispute; but it is certain, that all of them are accompanied with a determination that something is true or false, and a consequent belief. If this determination be not judgment, it is an operation that has got no name; for it is not simple apprehension, neither is it reasoning; it is a mental affirmation or negation; it may be expressed by a proposition affirmative or negative, and it is accompanied with the firmest belief. These are the characteristics of judgment; and I must call it judgment, till I can find another name to it.

The judgments we form, are either of things necessary, or of things contingent. That three times three are nine; that the whole is greater than a part; are

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judgments about things necessary. Our assent to such necessary propositions is not grounded upon any operation of sense, of memory, or of consciousness, nor does it require their concurrence; it is unaccompanied by any other operation but that of conception, which must accompany all judgment; we may therefore call this judgment of things necessary, pure judgment. Our judgment of things contingent must always rest upon some other operation of the mind, such as sense, or memory, or consciousness, or credit in testimony, which is itself grounded upon sense.

That I now write upon a table covered with green cloth, is a contingent event, which I judge to be most undoubtedly true. My judgment is grounded upon my perception, and is a necessary concomitant or ingredient of my perception. That I dined with such a company yesterday, I judge to be true, because I remember it; and my judgment necessarily goes along with this remembrance, or makes a part of it.

There are many forms of speech in common language which show that the senses, memory and consciousness, are considered as judging faculties. We say that a man judges of colours by his eye, of sounds by his ear. We speak of the evidence of sense, the evidence of memory, the evidence of consciousness. Evidence is the ground of judgment, and when we see evidence, it is impossible not to judge.

When we speak of seeing or remembering any thing, we indeed hardly ever add that we judge it to be true. But the reason of this appears to be, that such an addition would be mere superfluity of speech, because every one knows, that what I see or remember, I must judge to be true, and cannot do otherwise.

And for the same reason, in speaking of any thing that is self-evident or strictly demonstrated, we do not say that we judge it to be true. This would be super-

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fluity of speech, because every man knows that we must judge that to be true which we hold self-evident or demonstrated.

When you say you saw such a thing, or that you distinctly remember it, or when you say of any proposition that it is self-evident, or strictly demonstrated, it would be ridiculous after this to ask whether you judge it to be true; nor would it be less ridiculous in you to inform us that you do. It would be a superfluity of speech of the same kind as if, not content with saying that you saw such an object, you should add that you saw it with your eyes.

There is therefore good reason why, in speaking or writing, judgment should not be expressly mentioned, when all men know it to be necessarily implied; that is, when there can be no doubt. In such cases, we barely mention the evidence. But when the evidence mentioned leaves room for doubt, then, without any superfluity or tautology, we say we judge the thing to be so, because this is not implied in what was said before. A woman with child never says, that, going such a journey, she carried her child along with her. We know that, while it is in her womb, she must carry it along with her. There are some operations of mind that may be said to carry judgment in their womb, and can no more leave it behind them than the pregnant woman can leave her child. Therefore, in speaking of such operations, it is not expressed.

Perhaps this manner of speaking may have led philosophers into the opinion, that in perception by the senses, in memory, and in consciousness, there is no judgment at all. Because it is not mentioned in speaking of these faculties, they conclude that it does not accompany them; that they are only different modes of simple apprehension, or of acquiring ideas; and that it is no part of their office to judge.

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I apprehend the same cause has led Mr. Locke into a notion of judgment which I take to be peculiar to him. He thinks that the mind has two faculties conversant about truth and falsehood: 1st, knowledge; and, 2dly, judgment. In the first, the perception of the agreement or disagreement of the ideas is certain. In the second, it is not certain, but probable only.

According to this notion of judgment, it is not by judgment that I perceive that two and three make five; it is by the faculty of knowledge. I apprehend there can be no knowledge without judgment, though there may be judgment without that certainty which we commonly call knowledge.

Mr. Locke, in another place of his Essay, tells us, "that the notice we have by our senses of the existence of things without us, though not altogether so certain as our intuitive knowledge, or the deductions of our reason about abstract ideas, yet is an assurance that deserves the name of knowledge." I think, by this account of it, and by his definitions before given of knowledge and judgment, it deserves as well the name of *judgment*.

That I may avoid disputes about the meaning of words, I wish the reader to understand, that I give the name of judgment to every determination of the mind concerning what is true or what is false. This, I think, is what logicians, from the days of Aristotle, have called judgment. Whether it be called one faculty, as I think it has always been, or whether a philosopher chooses to split it into two, seems not very material. And if it be granted, that by our senses, our memory and consciousness, we not only have ideas, or simple apprehensions, but form determinations concerning what is true, and what is false; whether these determinations ought to be called *knowledge* or *judgment*, is of small moment.

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The judgments grounded upon the evidence of sense, of memory, and of consciousness, put all men upon a level. The philosopher, with regard to these, has no prerogative above the illiterate, or even above the savage.

Their reliance upon the testimony of these faculties is as firm and as well grounded as his. His superiority is in judgments of another kind; in judgments about things abstract and necessary. And he is unwilling to give the name of judgment to that wherein the most ignorant and unimproved of the species are his equals.

But philosophers have never been able to give any definition of judgment which does not apply to the determinations of our senses, our memory, and consciousness, nor any definition of simple apprehension which can comprehend those determinations.

Our judgments of this kind are purely the gift of nature, nor do they admit of improvement by culture. The memory of one man may be more tenacious than that of another; but both rely with equal assurance upon what they distinctly remember. One man's sight may be more acute, or his feeling more delicate than that of another; but both give equal credit to the distinct testimony of their sight and touch.

And as we have this belief by the constitution of our nature, without any effort of our own, so no effort of ours can overturn it.

The skeptic may perhaps persuade himself in general, that he has no ground to believe his senses or his memory: but, in particular cases that are interesting, his disbelief vanishes, and he finds himself under a necessity of believing both.

These judgments, may, in the strictest sense, be called *judgments of nature*. Nature has subjected us to them whether we will or not. They are neither

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got, nor can they be lost by any use or abuse of our faculties; and it is evidently necessary for our preservation that it should be so. For if belief in our senses and in our memory were to be learned by culture, the race of men would perish before they learned this lesson. It is necessary to all men for their being and preservation, and therefore is unconditionally given to all men by the Author of nature.

I acknowledge, that if we were to rest in those judgments of nature of which we now speak, without building others upon them, they would not entitle us to the denomination of reasonable beings. But yet they ought not to be despised, for they are the foundation upon which the grand superstructure of human knowledge must be raised. And as in other superstructures the foundation is commonly overlooked, so it has been in this. The more sublime attainments of the human mind have attracted the attention of philosophers, while they have bestowed but a careless glance upon the humble foundation on which the whole fabric rests.

A fourth observation is, that some exercise of judgment is necessary in the formation of all abstract and general conceptions whether more simple or more complex; in dividing, in defining, and in general, in forming all clear and distinct conceptions of things, which are the only fit materials of reasoning.

These operations are allied to each other, and therefore I bring them under one observation. They are more allied to our rational nature than those mentioned in the last observation, and therefore are considered by themselves.

That I may not be mistaken, it may be observed, that I do not say that abstract notions, or other accurate notions of things, after they have been formed, cannot be barely conceived without any exercise of judg-

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ment about them. I doubt not that they may: but what I say, is, that, in their formation in the mind at first, there must be some exercise of judgment.

It is impossible to distinguish the different attributes belonging to the same subject, without judging that they are really different and distinguishable, and that they have that relation to the subject which logicians express, by saying that they may be *predicated* of it. We cannot generalize, without judging that the same attribute does or may belong to many individuals. It has been shown, that our simplest general notions are formed by these two operations of distinguishing and generalizing: judgment therefore is exercised in forming the simplest general notions.

In those that are more complex, and which have been shown to be formed by combining the more simple, there is another act of the judgment required; for such combinations are not made at random, but for an end; and judgment is employed in fitting them to that end. We form complex general notions for convenience of arranging our thoughts in discourse and reasoning; and therefore, of an infinite number of combinations that might be formed, we choose only those that are useful and necessary.

That judgment must be employed in dividing, as well as in distinguishing, appears evident. It is one thing to divide a subject properly, another to cut it in pieces. *Hoc non est dividere, sed frangere rem,* said Cicero, when he censured an improper division of Epicurus. Reason has discovered rules of division, which have been known to logicians more than two thousand years.

There are rules likewise of definition of no less antiquity and authority. A man may no doubt divide or define properly without attending to the rules, or even without knowing them. But this can only be, when he has judgment to perceive that to be right in a partic-

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ular case, which the rule determines to be right in all cases.

I add in general, that, without some degree of judgment, we can form no accurate and distinct notions of things; so that, one province of judgment is to aid us in forming clear and distinct conceptions of things, which are the only fit materials for reasoning.

This will probably appear to be a paradox to philosophers who have always considered the formation of ideas of every kind as belonging to simple apprehension; and that the sole province of judgment is to put them together in affirmative or negative propositions; and therefore it requires some confirmation.

1st, I think it necessarily follows from what has been already said in this observation. For if, without some degree of judgment, a man can neither distinguish, nor divide, nor define, nor form any general notion, simple or complex, he surely, without some degree of judgment, cannot have in his mind the materials necessary to reasoning.

There cannot be any proposition in language which does not involve some general conception. The proposition, *that I exist*, which Des Cartes thought the first of all truths, and the foundation of all knowledge, cannot be conceived without the conception of existence, one of the most abstract general conceptions. A man cannot believe his own existence, or the existence of any thing he sees or remembers, until he has so much judgment as to distinguish things that really exist from things which are only conceived. He sees a man six feet high; he conceives a man sixty feet high; he judges the first object to exist, because he sees it; the second he does not judge to exist, because he only conceives it. Now, I would ask, Whether he can attribute existence to the first object,

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and not to the second, without knowing what existence means? It is impossible.

How early the notion of existence enters into the mind, I cannot determine; but it must certainly be in the mind, as soon as we can affirm of any thing, with understanding, that it exists.

In every other proposition, the predicate at least must be a general notion; a *predicable* and an *universal* being one and the same. Besides this, every proposition either affirms or denies. And no man can have a distinct conception of a proposition, who does not understand distinctly the meaning of affirming or denying; but these are very general conceptions, and, as was before observed, are derived from judgment as their source and origin.

I am sensible that a strong objection may be made to this reasoning, and that it may seem to lead to an absurdity, or a contradiction. It may be said, that every judgment is a mental affirmation or negation. If therefore some previous exercise of judgment be necessary to understand what is meant by affirmation or negation, the exercise of judgment must go before any judgment, which is absurd.

In like manner, every judgment may be expressed by a proposition, and a proposition must be conceived before we can judge of it. If therefore we cannot conceive the meaning of a proposition without a previous exercise of judgment, it follows that judgment must be previous to the conception of any proposition, and at the same time that the conception of a proposition must be previous to all judgment, which is a contradiction.

The reader may please to observe, that I have limited what I have said to distinct conception, and some degree of judgment; and it is by this means I hope to avoid this labyrinth of absurdity and contradiction.

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The faculties of conception and judgment have an infancy and a maturity as man has. What I have said is limited to their mature state. I believe in their infant state they are very weak and indistinct; and that, by imperceptible degrees, they grow to maturity, each giving aid to the other, and receiving aid from it. But which of them first began this friendly intercourse, is beyond my ability to determine. It is like the question concerning the bird and the egg.

In the present state of things, it is true, that every bird comes from an egg, and every egg from a bird; and each may be said to be previous to the other. But if we go back to the origin of things, there must have been some bird that did not come from any egg, or some egg that did not come from any bird.

In like manner, in the mature state of man, distinct conception of a proposition supposes some previous exercise of judgment, and distinct judgment supposes distinct conception. Each may truly be said to come from the other, as the bird from the egg, and the egg from the bird. But if we trace back this succession to its origin, that is, to the first proposition that was ever conceived by the man, and the first judgment he ever formed, I determine nothing about them, nor do I know in what order, or how they were produced, any more than how the bones grow in the womb of her that is with child.

The first exercise of these faculties of conception and judgment is hid, like the sources of the Nile, in an unknown region.

The necessity of some degree of judgment to clear and distinct conceptions of things, may, I think, be illustrated by this similitude.

An artist, suppose a carpenter, cannot work in his art without tools, and these tools must be made by art. The exercise of the art therefore is necessary to make

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the tools, and the tools are necessary to the exercise of the art. There is the same appearance of contradiction, as in what I have advanced concerning the necessity of some degree of judgment, in order to form clear and distinct conceptions of things. These are the tools we must use in judging and in reasoning, and without them must make very bungling work; yet these tools cannot be made without some exercise of judgment.

The necessity of some degree of judgment in forming accurate and distinct notions of things will further appear, if we consider attentively what notions we can form, without any aid of judgment, of the objects of sense, of the operations of our own minds, or of the relations of things.

To begin with the objects of sense. It is acknowledged on all hands, that the first notions we have of sensible objects are got by the external senses only, and probably before judgment is brought forth; but these first notions are neither simple, nor are they accurate and distinct: they are gross and indistinct, and like the *chaos*, a *rudis indigestaque moles*. Before we can have any distinct notion of this mass, it must be analyzed; the heterogeneous parts must be separated in our conception, and the simple elements, which before lay hid in the common mass, must first be distinguished, and then put together into one whole.

In this way it is that we form distinct notions even of the objects of sense; but this analysis and composition, by habit, becomes so easy, and is performed so readily, that we are apt to overlook it, and to impute the distinct notion we have formed of the object to the senses alone; and this we are the more prone to do, because, when once we have distinguished the sensible qualities of the object from one another, the sense gives testimony to each of them.

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You perceive, for instance, an object white, round, and a foot in diameter: I grant that you perceive all these attributes of the object by sense; but if you had not been able to distinguish the colour from the figure, and both from the magnitude, your senses would only have given you one complex and confused notion of all these mingled together.

A man who is able to say with understanding, or to determine in his own mind, that this object is white, must have distinguished whiteness from other attributes. If he has not made this distinction, he does not understand what he says.

Suppose a cube of brass to be presented at the same time to a child of a year old and to a man. The regularity of the figure will attract the attention of both. Both have the senses of sight and of touch in equal perfection; and therefore, if any thing be discovered in this object by the man, which cannot be discovered by the child, it must be owing, not to the senses, but to some other faculty which the child has not yet attained.

1st, Then, the man can easily distinguish the body from the surface which terminates it; this the child cannot do. 2dly, The man can perceive, that this surface is made up of six planes of the same figure and magnitude; the child cannot discover this. 3dly, The man perceives that each of these planes has four equal sides, and four equal angles; and that the opposite sides of each plane, and the opposite planes are parallel.

It will surely be allowed, that a man of ordinary judgment may observe all this in a cube which he makes an object of contemplation, and takes time to consider; that he may give the name of a square, to a plane terminated by four equal sides, and four equal angles: and the name of a cube, to a solid terminated by six equal squares: all this is nothing else but analyzing the figure of the object presented to his senses

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into its simplest elements, and again compounding it of those elements.

By this analysis and composition, two effects are produced. 1st, From the one complex object which his senses presented, though one of the most simple the senses can present, he educes many simple and distinct notions of right lines, angles, plain surface, solid, equality, parallelism; notions which the child has not yet faculties to attain. 2dly, When he considers the cube as compounded of these elements, put together in a certain order, he has then, and not before, a distinct and scientific notion of a cube. The child neither conceives those elements, nor in what order they must be put together in order to make a cube; and therefore has no accurate notion of a cube, which can make it a subject of reasoning.

Whence I think we may conclude, that the notion which we have from the senses alone, even of the simplest objects of sense, is indistinct and incapable of being either described or reasoned upon, until it is analyzed into its simple elements, and considered as compounded of those elements.

If we should apply this reasoning to more complex objects of sense, the conclusion would be still more evident. A dog may be taught to turn a jack, but he can never be taught to have a distinct notion of a jack. He sees every part as well as a man: but the relation of the parts to one another, and to the whole, he has not judgment to comprehend.

A distinct notion of an object, even of sense, is never got in an instant; but the sense performs its office in an instant. Time is not required to see it better, but to analyze it, to distinguish the different parts, and their relation to one another, and to the whole.

Hence it is, that when any vehement passion or emotion hinders the cool application of judgment, we get

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no distinct notion of an object, even though the sense be long directed to it. A man who is put into a panic, by thinking he sees a ghost, may stare at it long, without having any distinct notion of it; it is his understanding, and not his sense that is disturbed by his horror. If he can lay that aside, judgment immediately enters upon its office, and examines the length and breadth, the colour, and figure, and distance of the object. Of these, while his panic lasted, he had no distinct notion, though his eyes were open all the time.

When the eye of sense is open, but that of judgment shut by a panic, or any violent emotion that engrosses the mind, we see things confusedly, and probably much in the same manner that brutes and perfect idiots do, and infants before the use of judgment.

There are therefore notions of the objects of sense which are gross and indistinct, and there are others that are distinct and scientific. The former may be got from the senses alone; but the latter cannot be obtained without some degree of judgment.

The clear and accurate notions which geometry presents to us of a point, a right line, an angle, a square, a circle, of ratios direct and inverse, and others of that kind, can find no admittance into a mind that has not some degree of judgment. They are not properly ideas of the senses, nor are they got by compounding ideas of the senses: but, by analysing the ideas or notions we get by the senses into their simplest elements, and again combining these elements into various, accurate, and elegant forms, which the senses never did nor can exhibit.

Had Mr. Hume attended duly to this, it ought to have prevented a very bold attempt, which he has presented through fourteen pages of his Treatise of Human Nature, to prove that geometry is founded upon ideas that are not exact, and axioms that are not precisely true.

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A mathematician might be tempted to think, that the man who seriously undertakes this has no great acquaintance with geometry; but I apprehend it is to be imputed to another cause, to a zeal for his own system. We see that even men of genius may be drawn into strange paradoxes, by an attachment to a favourite idol of the understanding, when it demands so costly a sacrifice.

We Protestants think, that the devotees of the Roman church pay no small tribute to her authority, when they renounce their five senses in obedience to her decrees. Mr. Hume's devotion to his system carries him even to trample upon mathematical demonstration.

The fundamental articles of his system are, that all the perceptions of the human mind are either impressions or ideas; and that ideas are only faint copies of impressions. The idea of a right line, therefore, is only a faint copy of some line that has been seen, or felt by touch; and the faint copy cannot be more perfect than the original. Now of such right lines, it is evident that the axioms of geometry are not precisely true; for two lines that are straight to our sight or touch may include a space, or they may meet in more points than one. If therefore we cannot form any notion of a straight line more accurate than that which we have from the senses of sight and touch, geometry has no solid foundation. If, on the other hand, the geometrical axioms are precisely true, the idea of a right line is not copied from any impression of sight or touch, but must have a different origin, and a more perfect standard.

As the geometrician, by reflecting only upon the extension and figure of matter, forms a set of notions more accurate and scientific than any which the senses exhibit; so the natural philosopher, reflecting upon

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other attributes of matter, forms another set, such as those of density, quantity of matter, velocity, momentum, fluidity, elasticity, centres of gravity, and of oscillation. These notions are accurate and scientific; but they cannot enter into a mind that has not some degree of judgment, nor can we make them intelligible to children, until they have some ripeness of understanding.

In navigation, the notions of latitude, longitude, course, leeway, cannot be made intelligible to children; and so it is with regard to the terms of every science, and of every art about which we can reason. They have had their five senses as perfect as men, for years before they are capable of distinguishing, comparing, and perceiving the relations of things, so as to be able to form such notions. They acquire the intellectual powers by a slow progress, and by imperceptible degrees, and by means of them learn to form distinct and accurate notions of things, which the senses could never have imparted.

Having said so much of the notions we get from the senses alone of the objects of sense, let us next consider what notions we can have from consciousness alone of the operations of our minds.

Mr. Locke very properly calls consciousness an internal sense. It gives the like immediate knowledge of things in the mind, that is, of our own thoughts and feelings, as the senses give us of things external. There is this difference, however, that an external object may be at rest, and the sense may be employed about it for some time. But the objects of consciousness are never at rest; the stream of thought flows like a river, without stopping a moment; the whole train of thought passes in succession under the eye of consciousness, which is always employed about the present. But is

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it consciousness that analyzes complex operations, distinguishes their different ingredients, and combines them in distinct parcels under general names? This surely is not the work of consciousness, nor can it be performed without reflection, recollecting, and judging of what we were conscious of, and distinctly remember. This reflection does not appear in children. Of all the powers of the mind, it seems to be of the latest growth, whereas consciousness is coeval with the earliest.

Consciousness, being a kind of internal sense, can no more give us distinct and accurate notions of the operations of our minds, than the external senses can give of external objects. Reflection upon the operations of our minds is the same kind of operation with that by which we form distinct notions of external objects. They differ not in their nature, but in this only, that one is employed about external, and the other about internal objects; and both may, with equal propriety, be called reflection.

Mr. Locke has restricted the word reflection to that which is employed about the operations of our minds, without any authority, as I think, from custom, the arbiter of language: for surely I may reflect upon what I have seen or heard, as well as upon what I have thought. The word, in its proper and common meaning, is equally applicable to objects of sense, and to objects of consciousness. He has likewise confounded reflection with consciousness, and seems not to have been aware that they are different powers, and appear at very different periods of life.

If that eminent philosopher had been aware of these mistakes about the meaning of the word *reflection*, he would, I think, have seen, that as it is by reflection upon the operations of our own minds that we can form

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any distinct and accurate notions of them, and not by consciousness without reflection; so it is by reflection upon the objects of sense, and not by the senses without reflection, that we can form distinct notions of them. Reflection upon any thing, whether external or internal, makes it an object of our intellectual powers, by which we survey it on all sides, and form such judgments about it as appear to be just and true.

I proposed, in the *third* place, to consider our notions of the relations of things: and here I think, that, without judgment, we cannot have any notion of relations.

There are two ways in which we get the notion of relations. The first is, by comparing the related objects, when we have before had the conception of both. By this comparison, we perceive the relation, either immediately, or by a process of reasoning. That my foot is longer than my finger, I perceive immediately; and that three is the half of six. This immediate perception is immediate and intuitive judgment. That the angles at the base of an isosceles triangle are equal, I perceive by a process of reasoning, in which it will be acknowledged there is judgment.

Another way in which we get the notion of relations, which seems not to have occurred to Mr. Locke, is, when, by attention to one of the related objects, we perceive, or judge, that it must, from its nature, have a certain relation to something else, which before, perhaps, we never thought of; and thus our attention to one of the related objects produces the notion of a correlate, and of a certain relation between them.

Thus when I attend to colour, figure, weight, I cannot help judging these to be qualities which cannot exist without a subject; that is, something which is coloured, figured, heavy. If I had not perceived such things to be qualities, I should never have had any notion of their subject, or of their relation to it.

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By attending to the operations of thinking, memory, reasoning, we perceive or judge, that there must be something which thinks, remembers, and reasons, which we call the mind. When we attend to any change that happens in nature, judgment informs us, that there must be a cause of this change, which had power to produce it; and thus we get the notions of cause and effect, and of the relation between them. When we attend to body, we perceive that it cannot exist without space; hence we get the notion of space, which is neither an object of sense nor of consciousness, and of the relation which bodies have to a certain portion of unlimited space, as their place.

I apprehend, therefore, that all our notions of relations may more properly be ascribed to judgment as their source and origin, than to any other power of the mind. We must first perceive relations by our judgment, before we can conceive them without judging of them; as we must first perceive colours by sight, before we can conceive them without seeing them. I think Mr. Locke, when he comes to speak of the ideas of relations, does not say that they are ideas of sensation or reflection, but only that they terminate in, and are concerned about ideas of sensation or reflection.

The notions of unity and number are so abstract, that it is impossible they should enter into the mind until it has some degree of judgment. We see with what difficulty, and how slowly, children learn to use, with understanding, the names even of small numbers, and how they exult in this acquisition when they have attained it. Every number is conceived by the relation which it bears to unity, or to known combinations of units; and upon that account, as well as on account of its abstract nature, all distinct notions of it require some degree of judgment.

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In its proper place, I shall have occasion to show, that judgment is an ingredient in all determinations of taste; in all moral determinations; and in many of our passions and affections. So that this operation, after we come to have any exercise of judgment, mixes with most of the operations of our minds, and, in analyzing them, cannot be overlooked without confusion and error.

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CHAP. II.

OF COMMON SENSE.

The word *sense*, in common language, seems to have a different meaning from that which it has in the writings of philosophers; and those different meanings are apt to be confounded, and to occasion embarrassment and error.

Not to go back to ancient philosophy upon this point, modern philosophers consider sense as a power that has nothing to do with judgment. Sense they consider as the power by which we receive certain ideas or impressions from objects; and judgment as the power by which we compare those ideas, and perceive their necessary agreements and disagreements.

The external senses give us the idea of colour, figure, sound, and other qualities of body, primary or secondary. Mr. Locke gave the name of an internal sense to consciousness, because by it we have the ideas of thought, memory, reasoning, and other operations of our own minds. Dr. Hutcheson of Glasgow, conceiving that we have simple and original ideas which cannot be imputed either to the external senses, or to consciousness, introduced other internal senses; such as the sense of harmony, the sense of beauty, and the moral sense. Ancient philosophers also spake of internal senses, of which memory was accounted one.

But all these senses, whether external or internal, have been represented by philosophers, as the means of furnishing our minds with ideas, without including any kind of judgment. Dr. Hutcheson defines a sense to be a determination of the mind to receive any idea from the presence of an object independent on our will.

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"By this term, sense, philosophers in general have denominated those faculties, in consequence of which we are liable to feelings relative to ourselves only, and from which they have not pretended to draw any conclusions concerning the nature of things; whereas truth is not relative, but absolute, and real." Dr. Priestly's Exam. of Dr. Reid, &c. page 123.

On the contrary, in common language, sense always implies judgment. A man of sense is a man of judgment. Good sense is good judgment. Nonsense is what is evidently contrary to right judgment. Common sense is that degree of judgment which is common to men with whom we can converse and transact business.

Seeing and hearing by philosophers are called senses, because we have ideas by them; by the vulgar they are called senses, because we judge by them. We judge of colours by the eye; of sounds by the ear; of beauty and deformity by taste; of right and wrong in conduct, by our moral sense, or conscience.

Sometimes philosophers, who represent it as the sole province of sense to furnish us with ideas, fall unawares into the popular opinion, that they are judging faculties. Thus Locke, book 4. chap. 11. "And of this, that the quality or accident of colour does really exist, and has a being without me, the greatest assurance I can possibly have, and to which my faculties can attain, is the testimony of my eyes, which are the proper and sole judges of this thing."

This popular meaning of the word *sense* is not peculiar to the English language. The corresponding words in Greek, Latin, and I believe in all the European languages, have the same latitude. The Latin words *sentire*, *sententia*, *sensa*, *sensus*, from the last of which the English word *sense* is borrowed, express

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judgment or opinion, and are applied indifferently to objects of external sense, of taste, of morals, and of the understanding.

I cannot pretend to assign the reason why a word, which is no term of art, which is familiar in common conversation, should have so different a meaning in philosophical writings. I shall only observe, that the philosophical meaning corresponds perfectly with the account which Mr. Locke and other modern philosophers give of judgment. For if the sole province of the senses, external and internal, be to furnish the mind with the ideas about which we judge and reason, it seems to be a natural consequence, that the sole province of judgment should be to compare those ideas, and to perceive their necessary relations.

These two opinions seem to be so connected, that one may have been the cause of the other. I apprehend, however, that if both be true, there is no room left for any knowledge or judgment, either of the real existence of contingent things, or of their contingent relations.

To return to the popular meaning of the word sense, I believe it would be much more difficult to find good authors who never use it in that meaning, than to find such as do.

We may take Mr. Pope as good authority for the meaning of an English word. He uses it often, and in his epistle to the Earl of Burlington, has made a little descant upon it.

> "Oft have you hinted to your brother Peer,
> A certain truth, which many buy too dear;
> Something there is more needful than expense,
> And something previous ev'n to taste,——'tis sense.
> Good sense, which only is the gift of Heaven;
> And though no science, fairly worth the seven;
> A light, which in yourself you must perceive,
> Jones and Le Notre have it not to give."

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This inward light or sense is given by Heaven to different persons in different degrees. There is a certain degree of it which is necessary to our being subjects of law and government, capable of managing our own affairs, and answerable for our conduct toward others. This is called common sense, because it is common to all men with whom we can transact business, or call to account for their conduct.

The laws of all civilized nations distinguish those who have this gift of Heaven, from those who have it not. The last may have rights which ought not to be violated, but having no understanding in themselves to direct their actions, the laws appoint them to be guided by the understanding of others. It is easily discerned by its effects in men's actions, in their speeches, and even in their looks; and when it is made a question, whether a man has this natural gift or not, a judge or a jury, upon a short conversation with him, can, for the most part, determine the question with great assurance.

The same degree of understanding which makes a man capable of acting with common prudence in the conduct of life, makes him capable of discovering what is true and what is false in matters that are self-evident, and which he distinctly apprehends.

All knowledge, and all science, must be built upon principles that are self-evident; and of such principles, every man who has common sense is a competent judge, when he conceives them distinctly. Hence it is, that disputes very often terminate in an appeal to common sense.

While the parties agree in the first principles on which their arguments are grounded, there is room for reasoning; but when one denies what to the other appears too evident to need, or to admit of proof, reasoning seems to be at an end; an appeal is made to

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common sense, and each party is left to enjoy his own opinion.

There seems to be no remedy for this, nor any way left to discuss such appeals, unless the decisions of common sense can be brought into a code, in which all reasonable men shall acquiesce. This indeed, if it be possible, would be very desirable, and would supply a desideratum in logic; and why should it be thought impossible that reasonable men should agree in things that are self-evident?

All that is intended in this chapter, is to explain the meaning of common sense, that it may not be treated, as it has been by some, as a new principle, or as a word without any meaning. I have endeavoured to show, that sense, in its most common, and therefore its most proper meaning, signifies *judgment*, though philosophers often use it in another meaning. From this it is natural to think, that common sense should mean common judgment; and so it really does.

What the precise limits are which divide common judgment from what is beyond it on the one hand, and from what falls short of it on the other, may be difficult to determine; and men may agree in the meaning of the word who have different opinions about those limits, or who even never thought of fixing them. This is as intelligible as, that all Englishmen should mean the same thing by the county of York, though perhaps not a hundredth part of them can point out its precise limits.

Indeed, it seems to me, that *common sense*, is as unambiguous a word, and as well understood as the *county of York*. We find it in innumerable places in good writers; we hear it on innumerable occasions in conversation; and, as far as I am able to judge, always in the same meaning. And this is probably the reason why it is so seldom defined or explained.

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Dr. Johnson, in the authorities he gives, to show that the word *sense* signifies understanding, soundness of faculties, strength of natural reason, quotes Dr. Bentley for what may be called a definition of common sense, though probably not intended for that purpose, but mentioned accidentally: "God has endowed mankind with power and abilities, which we call natural light and reason, and common sense."

It is true, that common sense is a popular, and not a scholastic word; and by most of those who have treated systematically of the powers of the understanding, it is only occasionally mentioned, as it is by other writers. But I recollect two philosophical writers, who are exceptions to this remark. One is Buffier, who treated largely of common sense, as a principle of knowledge, above fifty years ago. The other is bishop Berkeley, who, I think, has laid as much stress upon common sense, in opposition to the doctrines of philosophers, as any philosopher that has come after him. If the reader chooses to look back to Essay 2. chap. 10. he will be satisfied of this, from the quotations there made for another purpose, which it is unnecessary here to repeat.

Men rarely ask what common sense is; because every man believes himself possessed of it, and would take it for an imputation upon his understanding to be thought unacquainted with it. Yet I remember two very eminent authors who have put this question; and it is not improper to hear their sentiments upon a subject so frequently mentioned, and so rarely canvassed.

It is well known, that lord Shaftesbury gave to one of his Treatises the title of Sensus Communis; an Essay on the Freedom of Wit and Humour, in a letter to a friend; in which he puts his friend in mind of a free conversation with some of their friends on the subjects of morality and religion. Amidst the different opinions started and maintained with great life and ingenu-

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ity, one or other would every now and then take the liberty to appeal to common sense. Every one allowed the appeal; no one would offer to call the authority of the court in question, till a gentleman, whose good understanding was never yet brought in doubt, desired the company very gravely that they would tell him what common sense was.

"If," said he, "by the word *sense*, we were to understand opinion and judgment; and by the word *common*, the generality, or any considerable part of mankind, it would be hard to discover where the subject of common sense could lie; for that which was according to the sense of one part of mankind, was against the sense of another: and if the majority were to determine common sense, it would change as often as men changed. That in religion, common sense was as hard to determine as *catholic* or *orthodox*. What to one was absurdity, to another was demonstration.

"In policy, if plain British or Dutch sense were right, Turkish and French must certainly be wrong, and as mere nonsense as passive obedience seemed, we found it to be the common sense of a great party amongst ourselves, a greater party in Europe, and perhaps the greatest part of all the world besides. As for morals, the difference was still wider; for even the philosophers could never agree in one and the same system. And some even of our most admired modern philosophers had fairly told us, that virtue and vice had no other law or measure than mere fashion and vogue."

This is the substance of the gentleman's speech, which, I apprehend, explains the meaning of the word perfectly, and contains all that has been said, or can be said against the authority of common sense, and the propriety of appeals to it.

As there is no mention of any answer immediately made to this speech, we might be apt to conclude, that

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the noble author adopted the sentiments of the intelligent gentleman, whose speech he recites. But the contrary is manifest, from the title of Sensus Communis given to his Essay, from his frequent use of the word, and from the whole tenor of the Essay.

The author appears to have a double intention in that Essay, corresponding to the double title prefixed to it. One intention is, to justify the use of wit, humour, and ridicule, in discussing among friends the gravest subjects. "I can very well suppose," says he, "men may be frighted out of their wits; but I have no apprehension they should be laughed out of them. I can hardly imagine, that, in a pleasant way, they should ever be talked out of their love for society, or reasoned out of humanity and common sense."

The other intention, signified by the title Sensus Communis, is carried on hand in hand with the first, and is to show, that common sense is not so vague and uncertain a thing as it is represented to be in the skeptical speech before recited. "I will try," says he, "what certain knowledge or assurance of things may be recovered in that very way, to wit, of humour, by which all certainty, you thought, was lost, and an endless skepticism introduced."

He gives some criticisms upon the word *sensus communis* in Juvenal, Horace, and Seneca; and after showing, in a facetious way throughout the Treatise, that the fundamental principles of morals, of politics, of criticism, and of every branch of knowledge, are the dictates of common sense, he sums up the whole in these words: "That some moral and philosophical truths there are so evident in themselves, that it would be easier to imagine half mankind run mad, and joined precisely in the same species of folly, than to admit any thing as truth, which should be advanced against such natural knowledge, fundamental reason, and common sense." And, on taking leave, he adds: "And now,

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my friend, should you find I had moralized in any tolerable manner, according to common sense, and without canting, I should be satisfied with my performance."

Another eminent writer who has put the question what common sense is, is Fenelon, the famous Archbishop of Cambray.

That ingenious and pious author, having had an early prepossession in favour of the Cartesian philosophy, made an attempt to establish, on a sure foundation, the metaphysical arguments which Des Cartes had invented to prove the being of the Deity. For this purpose, he begins with the Cartesian doubt. He proceeds to find out the truth of his own existence, and then to examine wherein the evidence and certainty of this, and other such primary truths consisted. This, according to Cartesian principles, he places in the clearness and distinctness of the ideas. On the contrary, he places the absurdity of the contrary propositions, in their being repugnant to his clear and distinct ideas.

To illustrate this, he gives various examples of questions manifestly absurd and ridiculous, which every man of common understanding would at first sight perceive to be so, and then goes on to this purpose.

"What is it that makes these questions ridiculous? Wherein does this ridicule precisely consist? It will perhaps be replied, that it consists in this, that they shock common sense. But what is this same common sense? It is not the first notions that all men have equally of the same things. This common sense, which is always and in all places the same; which prevents inquiry; which makes inquiry in some cases ridiculous; which, instead of inquiring, makes a man laugh whether he will or not; which puts it out of a man's power to doubt; this sense, which only waits to be consulted; which shows itself at the first glance, and immediately discovers the evidence or the absurdity of a question; is not this the same that I call my ideas?

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"Behold then those ideas or general notions, which it is not in my power either to contradict or examine, and by which I examine and decide in every case, insomuch that I laugh instead of answering, as often as any thing is proposed to me, which is evidently contrary to what these immutable ideas represent."

I shall only observe upon this passage, that the interpretation it gives of Des Cartes's criterion of truth, whether just or not, is the most intelligible and the most favourable I have met with.

I beg leave to mention one passage from Cicero, and to add two or three from late writers, which show that this word is not become obsolete, nor has changed its meaning.

De Oratore, lib. 3. "Omnes enim tacito quodam sensu, sine ulla arte aut ratione, in artibus ac rationibus, recta ac prava dijudicant. Idque cum faciant in picturis, et in signis, et in aliis operibus, ad quorum intelligentiam a natura minus habent instrumenti, tum multo ostendunt magis in verborum, numerorum, vocumque judicio; quod ea sint in communibus infixa sensibus; neque earum rerum quemquam funditus natura voluit expertem."

Hume's Essays and Treatises, vol. i. p. 5. "But a philosopher who proposes only to represent the common sense of mankind in more beautiful and more engaging colours, if by accident he commits a mistake, goes no further, but renewing his appeal to common sense, and the natural sentiments of the mind, returns into the right path, and secures himself from any dangerous illusion."

Hume's Inquiry concerning the principles of Morals, p. 2. "Those who have refused the reality of moral distinctions may be ranked among the disingenuous disputants. The only way of converting an antagonist of this kind is to leave him to himself: for, finding that

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nobody keeps up the controversy with him, it is probable he will at last, of himself, from mere weariness, come over to the side of common sense and reason."

Priestly's Institutes, Prelim. Essay, vol. i. p. 27. "Because common sense is a sufficient guard against many errors in religion, it seems to have been taken for granted, that common sense is a sufficient instructer also, whereas in fact, without positive instruction, men would naturally have been mere savages with respect to religion; as, without similar instruction, they would be savages with respect to the arts of life and the sciences. Common sense can only be compared to a judge; but what can a judge do without evidence and proper materials from which to form a judgment?"

Priestly's Examination of Dr. Reid, &c. page 127. "But should we, out of complaisance, admit that what has hitherto been called judgment may be called sense, it is making too free with the established signification of words to call it common sense, which, in common acceptation, has long been appropriated to a very different thing, *viz.* to that capacity for judging of common things that persons of middling capacities are capable of." Page 129. "I should therefore expect, that if a man was so totally deprived of common sense as not to be able to distinguish truth from falsehood in one case, he would be equally incapable of distinguishing it in another."

From this cloud of testimonies, to which hundreds might be added, I apprehend, that whatever censure is thrown upon those who have spoke of common sense as a principle of knowledge, or who have appealed to it in matters that are self-evident, will fall light, when there are so many to share in it. Indeed, the authority of this tribunal is too sacred and venerable, and has prescription too long in its favour to be now wisely called in question. Those who are disposed to do so, may remember the shrewd saying of Mr. Hobbes, "When reason is against a man, a man will

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be against reason." This is equally applicable to common sense.

From the account I have given of the meaning of this term, it is easy to judge both of the proper use and of the abuse of it.

It is absurd to conceive that there can be any opposition between reason and common sense. It is indeed the first born of reason, and as they are commonly joined together in speech and in writing, they are inseparable in their nature.

We ascribe to reason two offices, or two degrees. The first is to judge of things self-evident; the second to draw conclusions that are not self-evident from those that are. The first of these is the province, and the sole province of common sense; and therefore it coincides with reason in its whole extent, and is only another name for one branch or one degree of reason. Perhaps it may be said, Why then should you give it a particular name, since it is acknowledged to be only a degree of reason? It would be a sufficient answer to this, Why do you abolish a name which is to be found in the language of all civilized nations, and has acquired a right by prescription? Such an attempt is equally foolish and ineffectual. Every wise man will be apt to think, that a name which is found in all languages as far back as we can trace them, is not without some use.

But there is an obvious reason why this degree of reason should have a name appropriated to it; and that is, that in the greatest part of mankind no other degree of reason is to be found. It is this degree that entitles them to the denomination of reasonable creatures. It is this degree of reason, and this only, that makes a man capable of managing his own affairs, and answerable for his conduct toward others. There is therefore the best reason why it should have a name appropriated to it.

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These two degrees of reason differ in other respects, which would be sufficient to entitle them to distinct names.

The first is purely the gift of Heaven. And where Heaven has not given it, no education can supply the want. The second is learned by practice and rules, when the first is not wanting. A man who has common sense may be taught to reason. But if he has not that gift, no teaching will make him able either to judge of first principles or to reason from them.

I have only this further to observe, that the province of common sense is more extensive in refutation than in confirmation. A conclusion drawn by a train of just reasoning from true principles cannot possibly contradict any decision of common sense, because truth will always be consistent with itself. Neither can such a conclusion receive any confirmation from common sense, because it is not within its jurisdiction.

But it is possible, that, by setting out from false principles, or by an error in reasoning, a man may be led to a conclusion that contradicts the decisions of common sense. In this case, the conclusion is within the jurisdiction of common sense, though the reasoning on which it was grounded be not; and a man of common sense may fairly reject the conclusion, without being able to show the error of the reasoning that led to it.

Thus, if a mathematician, by a process of intricate demonstration, in which some false step was made, should be brought to this conclusion, that two quantities, which are both equal to a third, are not equal to each other, a man of common sense, without pretending to be a judge of the demonstration, is well entitled to reject the conclusion, and to pronounce it absurd.

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CHAP. III.

SENTIMENTS OF PHILOSOPHERS CONCERNING JUDGMENT.

A DIFFERENCE about the meaning of a word ought not to occasion disputes among philosophers: but it is often very proper to take notice of such differences, in order to prevent verbal disputes. There are, indeed, no words in language more liable to ambiguity than those by which we express the operations of the mind; and the most candid and judicious may sometimes be led into different opinions about their precise meaning.

I hinted before what I take to be a peculiarity in Mr. Locke with regard to the meaning of the word *judgment*. and mentioned what I apprehend may have led him into it. But let us hear himself; Essay, book 4. chap. 14. "The faculty which God has given to man to supply the want of clear and certain knowledge, where that cannot be had, is judgment; whereby the mind takes its ideas to agree or disagree; or, which is the same, any proposition to be true or false, without perceiving a demonstrative evidence in the proofs. Thus the mind has two faculties, conversant about truth and falsehood. 1st, Knowledge; whereby it certainly perceives, and is undoubtedly satisfied of the agreement or disagreement of any ideas. 2dly, Judgment; which is the putting ideas together, or separating them from one another in the mind, when their certain agreement, or disagreement is not perceived, but presumed to be so."

Knowledge, I think, sometimes signifies things known; sometimes that act of the mind by which we know them. And in like manner opinion sometimes signifies things believed; sometimes the act of the

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mind by which we believe them. But judgment is the faculty which is exercised in both these acts of the mind. In knowledge, we judge without doubting; in opinion, with some mixture of doubt. But I know no authority, besides that of Mr. Locke, for calling knowledge a faculty, any more than for calling opinion a faculty.

Neither do I think that knowledge is confined within the narrow limits which Mr. Locke assigns to it; because the far greatest part of what all men call human knowledge, is in things which neither admit of intuitive nor of demonstrative proof.

I have all along used the word *judgment* in a more extended sense than Mr. Locke does in the passage above mentioned. I understand by it that operation of the mind, by which we determine, concerning any thing that may be expressed by a proposition, whether it be true or false. Every proposition is either true or false: so is every judgment. A proposition may be simply conceived without judging of it. But when there is not only a conception of the proposition, but a mental affirmation or negation, an assent or dissent of the understanding, whether weak or strong, that is judgment.

I think, that since the days of Aristotle, logicians have taken the word in this sense, and other writers, for the most part, though there are other meanings, which there is no danger of confounding with this.

We may take the authority of Dr. Isaac Watts, as a logician, as a man who understood English, and who had a just esteem of Mr. Locke's Essay. Logic, Introd. p. 5. "Judgment is that operation of the mind, wherein we join two or more ideas together by one affirmation or negation; that is, we either affirm or deny *this* to be *that*. *So this tree is high; that horse is not swift; the mind of man is a thinking being; mere matter has*

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no thought belonging to it; God is just; good men are often miserable in this world; a righteous governor will make a difference betwixt the evil and the good; which sentences are the effect of judgment, and are called propositions." And part 2. chap. 2. sect. 9. "The evidence of sense is, when we frame a proposition according to the dictates of any of our senses. So we judge, *that grass is green; that a trumpet gives a pleasant sound; that fire burns wood; water is soft; and iron hard.*"

In this meaning, judgment extends to every kind of evidence, probable or certain, and to every degree of assent or dissent. It extends to all knowledge, as well as to all opinion; with this difference only, that in knowledge it is more firm and steady, like a house founded upon a rock. In opinion it stands upon a weaker foundation, and is more liable to be shaken and overturned.

These differences about the meaning of words are not mentioned as if truth was on one side, and error on the other, but as an apology for deviating in this instance from the phraseology of Mr. Locke, which is for the most part accurate and distinct; and because attention to the different meanings that are put upon words by different authors is the best way to prevent our mistaking verbal differences for real differences of opinion.

The common theory concerning ideas, naturally leads to a theory concerning judgment, which may be a proper test of its truth; for as they are necessarily connected, they must stand or fall together. Their connection is thus expressed by Mr. Locke, book 4. chap. 1. "Since the mind, in all its thoughts and reasonings, has no other immediate object but its own ideas, which it alone does, or can contemplate, it is evident that our knowledge is only conversant about them. Knowledge then seems to me to be nothing but

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the *perception of the connection and agreement, or disagreement and repugnancy of any of our ideas. In this alone it consists.*"

There can only be one objection to the justice of this inference; and that is, that the antecedent proposition from which it is inferred, seems to have some ambiguity: for, in the first clause of that proposition, the mind is said to have no other *immediate* object but its own ideas; in the second, that it has no other object at all; that it does, or can contemplate ideas alone.

If the word *immediate* in the first clause be a mere expletive, and be not intended to limit the generality of the proposition, then the two clauses will be perfectly consistent, the second being only a repetition or explication of the first; and the inference that our knowledge is only conversant about ideas, will be perfectly just and logical.

But if the word *immediate* in the first clause be intended to limit the general proposition, and to imply, that the mind has other objects besides its own ideas, though no other immediate objects; then it will not be true that it does or can contemplate ideas alone; nor will the inference be justly drawn, that our knowledge is only conversant about ideas.

Mr. Locke must either have meant his antecedent proposition, without any limitation by the word *immediate*, or he must have meant to limit it by that word, and to signify that there are objects of the mind which are not ideas.

The first of these suppositions appears to me most probable, for several reasons.

1st, Because, when he purposely defines the word *idea*, in the introduction to the Essay, he says it is whatsoever is the object of the understanding when a man thinks; or whatever the mind can be employed about in thinking. Here there is no room left for ob-

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jects of the mind that are not ideas. The same definition is often repeated throughout the Essay. Sometimes, indeed, the word *immediate* is added, as in the passage now under consideration; but there is no intimation made that it ought to be understood when it is not expressed. Now if it had really been his opinion, that there are objects of thought which are not ideas, this definition, which is the ground work of the whole Essay, would have been very improper, and apt to mislead his reader.

2dly, He has never attempted to show how there can be objects of thought, which are not immediate objects; and indeed this seems impossible. For whatever the object be, the man either thinks of it, or he does not. There is no medium between these. If he thinks of it, it is an immediate object of thought while he thinks of it. If he does not think of it, it is no object of thought at all. Every object of thought, therefore, is an immediate object of thought, and the word *immediate*, joined to objects of thought, seems to be a mere expletive.

3dly. Though Malebranche and Bishop Berkeley believed, that we have no ideas of minds, or of the operations of minds, and that we may think and reason about them without ideas, this was not the opinion of Mr. Locke. He thought that there are ideas of minds, and of their operations, as well as of the objects of sense; that the mind perceives nothing but its own ideas, and that all words are the signs of ideas.

A fourth reason is, that to suppose that he intended to limit the antecedent proposition by the word *immediate*, is to impute to him a blunder in reasoning, which I do not think Mr. Locke could have committed; for what can be a more glaring paralogism than to infer, that since ideas are partly, though not solely, the objects of thought, it is evident that all our knowledge is only

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conversant about them. If, on the contrary, he meant that ideas are the only objects of thought, then the conclusion drawn is perfectly just and obvious; and he might very well say, *that since it is ideas only that the mind does or can contemplate, it is evident that our knowledge is only conversant about them.*

As to the conclusion itself, I have only to observe, that though he extends it only to what he calls knowledge, and not to what he calls judgment, there is the same reason for extending it to both.

It is true of judgment, as well as of knowledge, that it can only be conversant about objects of the mind, or about things which the mind can contemplate. Judgment, as well as knowledge supposes the conception of the object about which we judge; and to judge of objects that never were nor can be objects of the mind, is evidently impossible.

This therefore we may take for granted, that if knowledge be conversant about ideas only, because there is no other object of the mind, it must be no less certain, that judgment is conversant about ideas only, for the same reason.

Mr Locke adds, as the result of his reasoning, knowledge then seems to me to be nothing but the perception of the connection and agreement, or disagreement and repugnancy, of any of our ideas. In this alone it consists.

This is a very important point, not only on its own account, but on account of its necessary connection with his system concerning ideas, which is such, as that both must stand or fall together; for if there is any part of human knowledge which does not consist in the perception of the agreement or disagreement of ideas, it must follow, that there are objects of thought and of contemplation which are not ideas.

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This point, therefore, deserves to be carefully examined. With this view, let us first attend to its meaning, which I think can hardly be mistaken, though it may need some explication.

Every point of knowledge, and every judgment is expressed by a proposition, wherein something is affirmed or denied of the subject of the proposition.

By perceiving the connection or agreement of two ideas, I conceive is meant perceiving the truth of an affirmative proposition, of which the subject and predicate are ideas. In like manner, by perceiving the disagreement and repugnancy of any two ideas, I conceive is meant perceiving the truth of a negative proposition, of which both subject and predicate are ideas. This I take to be the only meaning the words can bear, and it is confirmed by what Mr. Locke says in a passage already quoted in this chapter, that "the mind, taking its ideas to agree or disagree, is the same as taking any proposition to be true or false." Therefore, if the definition of knowledge given by Mr. Locke be a just one, the subject, as well as the predicate of every proposition, by which any point of knowledge is expressed, must be an idea, and can be nothing else; and the same must hold of every proposition by which judgment is expressed, as has been shown above.

Having ascertained the meaning of this definition of human knowledge, we are next to consider how far it is just.

1st, I would observe, that if the word *idea* be taken in the meaning which it had at first among the Pythagoreans and Platonists, and if by knowledge be meant only abstract and general knowledge, which I believe Mr. Locke had chiefly in his view, I think the proposition is true, that such knowledge consists solely in perceiving the truth of propositions whose subject and predicate are ideas.

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By ideas here I mean things conceived abstractly, without regard to their existence. We commonly call them abstract notions, abstract conceptions, abstract ideas; the Peripatetics called them universals; and the Platonists, who knew no other ideas, called them ideas without addition.

Such ideas are both subject and predicate in every proposition which expresses abstract knowledge.

The whole body of pure mathematics is an abstract science; and in every mathematical proposition, both subject and predicate are ideas, in the sense above explained. Thus, when I say the side of a square is not commensurable to its diagonal; in this proposition *the side and the diagonal of a square* are the subjects, for being a relative proposition it must have two subjects. A square, its side, and its diagonal, are ideas, or universals; they are not individuals, but things predicable of many individuals. Existence is not included in their definition, nor in the conception we form of them. The predicate of the proposition is *commensurable*, which must be an universal, as the predicate of every proposition is so. In other branches of knowledge many abstract truths may be found, but, for the most part, mixed with others that are not abstract.

I add, that I apprehend that what is strictly called demonstrative evidence, is to be found in abstract knowledge only. This was the opinion of Aristotle, of Plato, and I think of all the ancient philosophers; and I believe in this they judged right. It is true, we often meet with demonstration in astronomy, in mechanics, and in other branches of natural philosophy; but I believe we shall always find that such demonstrations, are grounded upon principles or suppositions, which have neither intuitive nor demonstrative evidence.

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Thus when we demonstrate, that the path of a projectile *in vacuo* is a parabola, we suppose that it is acted upon with the same force, and in the same direction through its whole path by gravity. This is not intuitively known, nor is it demonstrable: and in the demonstration, we reason from the laws of motion, which are principles not capable of demonstration, but grounded on a different kind of evidence.

Ideas, in the sense above explained, are creatures of the mind; they are fabricated by its rational powers; we know their nature and their essence; for they are nothing more than they are conceived to be: and because they are perfectly known, we can reason about them with the highest degree of evidence.

And as they are not things that exist, but things conceived, they neither have place nor time, nor are they liable to change.

When we say that they are in the mind, this can mean no more but that they are conceived by the mind, or that they are objects of thought. The act of conceiving them is no doubt in the mind; the things conceived have no place, because they have no existence. Thus a circle, considered abstractly, is said figuratively to be in the mind of him that conceives it; but in no other sense than the city of London or the kingdom of France is said to be in his mind when he thinks of those objects.

Place and time belong to finite things that exist, but not to things that are barely conceived. They may be objects of conception to intelligent beings in every place, and at all times. Hence the Pythagoreans and Platonists were led to think that they are eternal and omnipresent. If they had existence, they must be so; for they have no relation to any one place or time, which they have not to every place and to every time.

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The natural prejudice of mankind, that what we conceive must have existence, led those ancient philosophers to attribute existence to ideas; and by this they were led into all the extravagant and mysterious parts of their system. When it is purged of these, I apprehend it to be the only intelligible and rational system concerning ideas.

I agree with them therefore, that ideas are immutably the same in all times and places: for this means no more but that a circle is always a circle, and a square always a square.

I agree with them, that ideas are the patterns or exemplars, by which every thing was made that had a beginning: for an intelligent artificer must conceive his work before it is made; he makes it according to that conception; and the thing conceived, before it exists, can only be an idea.

I agree with them, that every species of things considered abstractly, is an idea; and that the idea of the species is in every individual of the species, without division or multiplication. This indeed is expressed somewhat mysteriously, according to the manner of the sect; but it may easily be explained.

Every idea is an attribute; and it is a common way of speaking, to say, that the attribute is in every subject of which it may truly be affirmed. Thus, *to be above fifty years of age*, is an attribute or idea. This attribute may be in, or affirmed of, fifty different individuals, and be the same in all, without division or multiplication.

I think, that not only every species, but every genus, higher or lower, and every attribute considered abstractly, is an idea. These are things conceived without regard to existence; they are universals, and therefore ideas, according to the ancient meaning of that word.

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It is true, that, after the Platonists entered into disputes with the Peripatetics, in order to defend the existence of eternal ideas, they found it prudent to contract the line of defence, and maintained only that there is an idea of every species of natural things, but not of the genera, nor of things artificial. They were unwilling to multiply beings beyond what was necessary; but in this I think they departed from the genuine principles of their system.

The definition of a species, is nothing but the definition of the genus, with the addition of a specific difference; and the division of things into species is the work of the mind, as well as their division into genera and classes. A species, a genus, an order, a class, is only a combination of attributes made by the mind, and called by one name. There is therefore the same reason for giving the name of *idea* to every attribute, and to every species and genus, whether higher or lower. These are only more complex attributes, or combinations of the more simple. And though it might be improper, without necessity, to multiply beings, which they believed to have a real existence; yet, had they seen that ideas are not things that exist, but things that are conceived, they would have apprehended no danger nor expense from their number.

Simple attributes, species and genera, lower or higher, are all things conceived, without regard to existence; they are universals, they are expressed by general words, and have an equal title to be called by the name of *ideas*.

I likewise agree with those ancient philosophers, that ideas are the object, and the sole object of science, strictly so called; that is, of demonstrative reasoning.

And as ideas are immutable, so their agreements and disagreements, and all their relations and attributes are immutable. All mathematical truths are

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immutably true. Like the ideas about which they are conversant, they have no relation to time or place, no dependence upon existence or change. That the angles of a plane triangle are equal to two right angles, always was and always will be true, though no triangle had ever existed.

The same may be said of all abstract truths. On that account they have often been called eternal truths: and for the same reason, the Pythagoreans ascribed eternity to the ideas about which they are conversant. They may very properly be called necessary truths; because it is impossible they should not be true at all times and in all places.

Such is the nature of all truth that can be discovered, by perceiving the agreements and disagreements of *ideas*, when we take that word in its primitive sense. And that Mr. Locke, in his definition of knowledge, had chiefly in his view abstract truths, we may be led to think from the examples he gives to illustrate it.

But there is another great class of truths, which are not abstract and necessary, and therefore cannot be perceived in the agreements and disagreements of ideas. These are all the truths we know concerning the real existence of things; the truth of our own existence; of the existence of other things, inanimate, animal, and rational, and of their various attributes and relations.

These truths may be called contingent truths. I except only the existence and attributes of the Supreme Being, which is the only necessary truth I know regarding existence.

All other beings that exist, depend for their existence, and all that belongs to it, upon the will and power of the first cause; therefore neither their existence, nor their nature, nor any thing that befals them, is necessary, but contingent.

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But although the existence of the Deity be necessary, I apprehend we can only deduce it from contingent truths. The only arguments for the existence of a Deity which I am able to comprehend, are grounded upon the knowledge of my own existence, and the existence of other finite beings. But these are contingent truths.

I believe, therefore, that by perceiving agreements and disagreements of ideas, no contingent truth whatsoever can be known, nor the real existence of any thing, not even our own existence, nor the existence of a Deity, which is a necessary truth. Thus I have endeavoured to show what knowledge may, and what cannot be attained, by perceiving the agreements and disagreements of ideas, when we take that word in its primitive sense.

We are, in the *next* place, to consider, whether knowledge consists in perceiving the agreement or disagreement of ideas, taking *ideas* in any of the senses in which the word is used by Mr. Locke and other modern philosophers.

1st, Very often the word *idea* is used so, that to have the idea of any thing is a *periphrasis* for conceiving it. In this sense, an idea is not an object of thought, it is thought itself. It is the act of the mind by which we conceive any object. And it is evident that this could not be the meaning which Mr. Locke had in view in his definition of knowledge.

2dly, A second meaning of the word *idea* is that which Mr. Locke gives in the Introduction to his Essay, when he is making an apology for the frequent use of it. "It being that term, I think, which serves best to stand for whatsoever is the object of the understanding when a man thinks, or whatever it is which a man can be employed about in thinking."

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By this definition, indeed, every thing that can be the object of thought is an idea. The objects of our thoughts may, I think, be reduced to two classes.

The first class comprehends all those objects which we not only can think of, but which we believe to have a real existence. Such as the Creator of all things, and all his creatures that fall within our notice. I can think of the sun and moon, the earth and sea, and of the various animal, vegetable, and inanimate productions with which it has pleased the bountiful Creator to enrich our globe. I can think of myself, of my friends and acquaintance. I think of the author of the Essay with high esteem. These, and such as these, are objects of the understanding which we believe to have real existence.

A second class of objects of the understanding which a man may be employed about in thinking, are things which we either believe never to have existed, or which we think of without regard to their existence.

Thus, I can think of Don Quixote, of the island of Laputa, of Oceana, and of Utopia, which I believe never to have existed. Every attribute, every species, and every genus of things, considered abstractly, without any regard to their existence or non-existence, may be an object of the understanding.

To this second class of objects of the understanding, the name of idea does very properly belong, according to the primitive sense of the word, and I have already considered what knowledge does, and what does not consist in perceiving the agreements and disagreements of such ideas.

But if we take the word *idea* in so extensive a sense as to comprehend, not only the second, but also the first class of objects of the understanding, it will undoubtedly be true, that all knowledge consists in perceiving the agreements and disagreements of ideas: for

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it is impossible that there can be any knowledge, any judgment, any opinion, true or false, which is not employed about the objects of the understanding. But whatsoever is an object of the understanding is an idea, according to this second meaning of the word.

Yet I am persuaded that Mr. Locke, in his definition of knowledge, did not mean that the word *idea* should extend to all those things which we commonly consider as objects of the understanding.

Though bishop Berkeley believed that sun, moon, and stars, and all material things, are ideas, and nothing but ideas, Mr. Locke no where professes this opinion. He believed that we have ideas of bodies, but not that bodies are ideas. In like manner, he believed that we have ideas of minds, but not that minds are ideas. When he inquired so carefully into the origin of all our ideas, he did not surely mean to find the origin of whatsoever may be the object of the understanding, nor to resolve the origin of every thing that may be an object of understanding into sensation and reflection.

3dly, Setting aside, therefore, the two meanings of the word *idea* before mentioned, as meanings which Mr. Locke could not have in his view in the definition he gives of knowledge, the only meaning that could be intended in this place is that which I before called the philosophical meaning of the word *idea*, which has a reference to the theory commonly received about the manner in which the mind perceives external objects, and in which it remembers and conceives objects that are not present to it. It is a very ancient opinion, and has been very generally received among philosophers, that we cannot perceive or think of such objects immediately, but by the medium of certain images or representatives of them really existing in the mind at the time.

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To those images the ancients gave the name of species and phantasms. Modern philosophers have given them the name of ideas. "It is evident," says Mr. Locke, book 4. chapter 4. "the mind knows not things immediately, but only by the intervention of the ideas it has of them." And in the same paragraph he puts this question: "How shall the mind when it perceives nothing but its own ideas, know that they agree with things themselves?"

This theory I have already considered, in treating of perception, of memory, and of conception. The reader will there find the reasons that lead me to think, that it has no solid foundation in reason, or in attentive reflection upon those operations of our minds; that it contradicts the immediate dictates of our natural faculties, which are of higher authority than any theory; that it has taken its rise from the same prejudices which led all the ancient philosophers to think, that the Deity could not make this world without some eternal matter to work upon, and which led the Pythagoreans and Platonists to think, that he could not conceive the plan of the world he was to make without eternal ideas really existing as patterns to work by: and that this theory, when its necessary consequences are fairly pursued, leads to absolute skepticism, though those consequences were not seen by most of the philosophers who have adopted it.

I have no intention to repeat what has before been said upon those points; but only, taking ideas in this sense, to make some observations upon the definition which Mr. Locke gives of knowledge.

1st, If all knowledge consists in perceiving the agreements and disagreements of ideas, that is, of representative images of things existing in the mind, it obviously follows, that if there be no such ideas, there can be no knowledge: so that, if there should be found good reason for giving up this philosophical hypothesis, all knowledge must go along with it.

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I hope, however, it is not so; and that though this hypothesis, like many others, should totter and fall to the ground, knowledge will continue to stand firm, upon a more permanent basis.

The cycles and epicycles of the ancient astronomers were for a thousand years thought absolutely necessary to explain the motions of the heavenly bodies. Yet now, when all men believe them to have been mere fictions, astronomy has not fallen with them, but stands upon a more rational foundation than before. Ideas, or images of things existing in the mind, have for a longer time been thought necessary for explaining the operations of the understanding. If they should likewise at last be found to be fictions, human knowledge and judgment would suffer nothing by being disengaged from an unwieldy hypothesis. Mr. Locke surely did not look upon the existence of ideas as a philosophical hypothesis. He thought that we are conscious of their existence, otherwise he would not have made the existence of all our knowledge to depend upon the existence of ideas.

2dly, Supposing this hypothesis to be true, I agree with Mr. Locke, that it is an evident and necessary consequence that our knowledge can be conversant about ideas only, and must consist in perceiving their attributes and relations. For nothing can be more evident than this, that all knowledge, and all judgment and opinion, must be about things which are, or may be immediate objects of our thought. What cannot be the object of thought, or the object of the mind in thinking, cannot be the object of knowledge or of opinion.

Every thing we can know of any object must be either some attribute of the object, or some relation it bears to some other object or objects. By the agreements and disagreements of objects, I apprehend Mr. Locke intended to express both their attributes and

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their relations. If ideas then be the only objects of thought, the consequence is necessary, that they must be the only objects of knowledge, and all knowledge must consist in perceiving their agreements and disagreements, that is, their attributes and relations.

The use I would make of this consequence, is to show, that the hypothesis must be false, from which it necessarily follows: for if we have any knowledge of things that are not ideas, it will follow no less evidently, that ideas are not the only objects of our thoughts.

Mr. Locke has pointed out the extent and limits of human knowledge in his fourth book, with more accuracy and judgment than any philosopher had done before; but he has not confined it to the agreements and disagreements of ideas. And I cannot help thinking, that a great part of that book is an evident refutation of the principles laid down in the beginning of it.

Mr. Locke did not believe that he himself was an idea; that his friends and acquaintance were ideas; that the Supreme Being, to speak with reverence, is an idea; or that the sun and moon, the earth and the sea, and other external objects of sense, are ideas. He believed that he had some certain knowledge of all those objects. His knowledge, therefore, did not consist solely in perceiving the agreements and disagreements of his ideas: for, surely, to perceive the existence, the attributes, and relations of things, which are not ideas, is not to perceive the agreements and disagreements of ideas. And if things which are not ideas be objects of knowledge, they must be objects of thought. On the contrary, if ideas be the only objects of thought, there can be no knowledge either of our own existence, or of the existence of external objects, or of the existence of a Deity.

This consequence, as far as concerns the existence of external objects of sense, was afterward deduced

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from the theory of ideas by bishop Berkeley with the clearest evidence; and that author chose rather to adopt the consequence than to reject the theory on which it was grounded. But, with regard to the existence of our own minds, of other minds, and of a Supreme mind, the bishop, that he might avoid the consequence, rejected a part of the theory, and maintained, that we can think of minds, of their attributes and relations, without ideas.

Mr. Hume saw very clearly the consequences of this theory, and adopted them in his speculative moments; but candidly acknowledges, that, in the common business of life, he found himself under a necessity of believing with the vulgar. His Treatise of Human Nature is the only system to which the theory of ideas leads; and, in my apprehension, is, in all its parts, the necessary consequence of that theory.

Mr. Locke, however, did not see all the consequences of that theory; he adopted it without doubt or examination, carried along by the stream of philosophers that went before him; and his judgment and good sense have led him to say many things, and to believe many things that cannot be reconciled to it.

He not only believed his own existence, the existence of external things, and the existence of a Deity; but he has shown very justly how we come by the knowledge of these existences.

It might here be expected, that he should have pointed out the agreements and disagreements of ideas from which these existences are deduced; but this is impossible, and he has not even attempted it.

Our own existence, he observes, *we know intuitively*; but this intuition is not a perception of the agreement or disagreement of ideas; for the subject of the proposition, *I exist*, is not an idea, but a person.

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The knowledge of external objects of sense, he observes, *we can have only by sensation. This sensation* he afterward expresses more clearly by *the testimony of our senses, which are the proper and sole judges of this thing;* whose testimony *is the greatest assurance we can possibly have, and to which our faculties can attain.* This is perfectly agreeable to the common sense of mankind, and is perfectly understood by those who never heard of the theory of ideas. Our senses testify immediately the existence, and many of the attributes and relations of external material beings; and, by our constitution, we rely with assurance upon their testimony, without seeking a reason for doing so. This assurance, Mr. Locke acknowledges, deserves the name of knowledge. But those external things are not ideas, nor are their attributes and relations the agreements and disagreements of ideas, but the agreements and disagreements of things which are not ideas.

To reconcile this to the theory of ideas, Mr. Locke says, *that it is the actual receiving of ideas from without, that gives us notice of the existence of those external things.*

This, if understood literally, would lead us back to the doctrine of Aristotle, that our ideas, or species, come from without from the external objects, and are the image or form of those objects. But Mr. Locke, I believe, meant no more by it, but that our ideas of sense must have a cause, and that we are not the cause of them ourselves.

Bishop Berkeley acknowledges all this, and shows very clearly, that it does not afford the least shadow of reason for the belief of any material object. Nay, that there can be nothing external that has any resemblance to our ideas but the ideas of other minds.

It is evident, therefore, that the agreements and disagreements of ideas can give us no knowledge of the

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existence of any material thing. If any knowledge can be attained of things which are not ideas, that knowledge is a perception of agreements and disagreements, not of ideas, but of things that are not ideas.

As to the existence of a Deity, though Mr. Locke was aware that Des Cartes, and many after him, had attempted to prove it merely from the agreements and disagreements of ideas; yet "he thought it an ill way of establishing that truth, and silencing Atheists, to lay the whole stress of so important a point upon that sole foundation." And therefore he proves this point with great strength and solidity, from our own existence, and the existence of the sensible parts of the universe. By memory, Mr. Locke says, we have the knowledge of the past existence of several things: but all conception of past existence, as well as of external existence, is irreconcileable to the theory of ideas: because it supposes that there may be immediate objects of thought, which are not ideas presently existing in the mind.

I conclude, therefore, that if we have any knowledge of our own existence, or of the existence of what we see about us, or of the existence of a Supreme Being; or if we have any knowledge of things past by memory, that knowledge cannot consist in perceiving the agreements and disagreements of ideas.

This conclusion, indeed, is evident of itself: for if knowledge consists solely in the perception of the agreement or disagreement of ideas, there can be no knowledge of any proposition which does not express some agreement or disagreement of ideas; consequently there can be no knowledge of any proposition; which expresses either the existence, or the attributes or relations of things, which are not ideas. If therefore the theory of ideas be true, there can be no knowledge of any thing but of ideas. And, on the

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other hand, if we have any knowledge of any thing besides ideas, that theory must be false.

There can be no knowledge, no judgment, or opinion about things which are not immediate objects of thought. This I take to be self-evident. If, therefore, ideas be the only immediate objects of thought, they must be the only things in nature of which we can have any knowledge, and about which we can have any judgment or opinion.

This necessary consequence of the common doctrine of ideas Mr. Hume saw, and has made evident in his Treatise of Human Nature; but the use he made of it was not to overturn the theory with which it is necessarily connected, but to overturn all knowledge, and to leave no ground to believe any thing whatsoever. If Mr. Locke had seen this consequence, there is reason to think that he would have made another use of it.

That a man of Mr. Locke's judgment and penetration did not perceive a consequence so evident, seems indeed very strange; and I know no other account that can be given of it but this, that the ambiguity of the word *idea* has misled him in this, as in several other instances. Having at first defined ideas to be whatsoever is the object of the understanding when we think, he takes it very often in that unlimited sense; and so every thing that can be an object of thought is an idea. At other times, he uses the word to signify certain representative images of things in the mind, which philosophers have supposed to be immediate objects of thought. At other times, things conceived abstractly, without regard to their existence, are called ideas. Philosophy is much indebted to Mr. Locke for his observations on the abuse of words. It is pity he did not apply these observations to the word *idea*, the ambiguity and abuse of which has very much hurt his excellent Essay.

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There are some other opinions of philosophers concerning judgment, of which I think it unnecessary to say much.

Mr. Hume sometimes adopts Mr. Locke's opinion, that it is the perception of the agreement or disagreement of our ideas; sometimes he maintains, that judgment and reasoning resolve themselves into conception, and are nothing but particular ways of conceiving objects; and he says, that an opinion or belief may most accurately be defined, *a lively idea related to, or associated with a present impression.* Treatise of Human Nature, vol. i. page 172.

I have endeavoured before, in the first chapter of this Essay, to show that judgment is an operation of mind specifically distinct from the bare conception of an object. I have also considered his notion of belief, in treating of the theories concerning memory.

Dr. Hartly says, "That assent and dissent must come under the notion of ideas, being only those very complex internal feelings which adhere by association to such clusters of words as are called propositions in general, or affirmations and negations in particular."

This, if I understand its meaning, agrees with the opinion of Mr. Hume above mentioned, and has therefore been before considered.

Dr. Priestly has given another definition of judgment. "It is nothing more than the perception of the universal concurrence, or the perfect coincidence of two ideas; or the want of that concurrence or coincidence." This I think coincides with Mr. Locke's definition, and therefore has been already considered.

There are many particulars which deserve to be known, and which might very properly be considered in this Essay on judgment; concerning the various kinds of propositions by which our judgments are expressed; their subjects and predicates; their conver-

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sions and oppositions: but as these are to be found in every system of logic from Aristotle down to the present age, I think it unnecessary to swell this Essay with the repetition of what has been said so often. The remarks which have occurred to me upon what is commonly said on these points, as well as upon the art of syllogism; the utility of the school logic, and the improvements that may be made in it, will be found in a short account of Aristotle's Logic, with remarks, vol. i. Lord Kames has honoured it with a place in his Sketches of the History of Man.

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CHAP. IV.

OF FIRST PRINCIPLES IN GENERAL.

ONE of the most important distinctions of our judgments is, that some of them are intuitive, others grounded on argument.

It is not in our power to judge as we will. The judgment is carried along necessarily by the evidence, real or seeming, which appears to us at the time. But in propositions that are submitted to our judgment, there is this great difference; some are of such a nature that a man of ripe understanding may apprehend them distinctly, and perfectly understand their meaning without finding himself under any necessity of believing them to be true or false, probable or improbable. The judgment remains in suspense, until it is inclined to one side or another by reasons or arguments.

But there are other propositions which are no sooner understood than they are believed. The judgment follows the apprehension of them necessarily, and both are equally the work of nature, and the result of our original powers. There is no searching for evidence; no weighing of arguments; the proposition is not deduced or inferred from another; it has the light of truth in itself, and has no occasion to borrow it from another.

Propositions of the last kind, when they are used in matters of science, have commonly been called *axioms*; and on whatever occasion they are used, are called *first principles, principles of common sense, common notions, self-evident truths.* Cicero calls them *naturæ judicia, judicia communibus hominum sensibus infixa.* Lord Shaftesbury expresses them by the words, *natural knowledge, fundamental reason,* and *common sense.*

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What has been said, I think, is sufficient to distinguish first principles, or intuitive judgments, from those which may be ascribed to the power of reasoning; nor is it a just objection against this distinction, that there may be some judgments concerning which we may be dubious to which class they ought to be referred. There is a real distinction between persons within the house, and those that are without; yet it may be dubious to which the man belongs that stands upon the threshold.

The power of reasoning, that is of drawing a conclusion from a chain of premises, may with some propriety be called an art. "All reasoning," says Mr. Locke, "is search and casting about, and requires pains and application." It resembles the power of walking, which is acquired by use and exercise. Nature prompts to it, and has given the power of acquiring it; but must be aided by frequent exercise before we are able to walk. After repeated efforts, much stumbling, and many falls, we learn to walk; and it is in a similar manner that we learn to reason.

But the power of judging in self-evident propositions, which are clearly understood, may be compared to the power of swallowing our food. It is purely natural, and therefore common to the learned, and the unlearned; to the trained, and the untrained: it requires ripeness of understanding, and freedom from prejudice, but nothing else.

I take it for granted, that there are self-evident principles. Nobody, I think, denies it. And if any man were so skeptical as to deny that there is any proposition that is self-evident, I see not how it would be possible to convince him by reasoning.

But yet there seems to be great difference of opinions among philosophers about first principles. What one takes to be self-evident, another labours to prove by arguments, and a third denies altogether.

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Thus, before the time of Des Cartes, it was taken for a first principle, that there is a sun and a moon, an earth and sea, which really exist, whether we think of them or not. Des Cartes thought that the existence of those things ought to be proved by argument; and in this he has been followed by Malebranche, Arnauld, and Locke. They have all laboured to prove, by very weak reasoning, the existence of external objects of sense; and Berkeley, and Hume, sensible of the weakness of their arguments, have been led to deny their existence altogether.

The ancient philosophers granted, that all knowledge must be grounded on first principles, and that there is no reasoning without them. The Peripatetic philosophy was redundant rather than deficient in first principles. Perhaps the abuse of them in that ancient system may have brought them into discredit in modern times; for as the best things may be abused, so that abuse is apt to give a disgust to the thing itself; and as one extreme often leads into the opposite, this seems to have been the case in the respect paid to first principles in ancient and in modern times.

Des Cartes thought one principle, expressed in one word *cogito*, a sufficient foundation for his whole system, and asked no more.

Mr. Locke seems to think first principles of very small use. Knowledge consisting, according to him, in the perception of the agreement or disagreement of our ideas; when we have clear ideas, and are able to compare them together, we may always fabricate first principles as often as we have occasion for them. Such differences we find among philosophers about first principles.

It is likewise a question of some moment, whether the differences among men about first principles can be brought to any issue? When, in disputes, one man

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maintains that to be a first principle, which another denies, commonly both parties appeal to common sense, and so the matter rests. Now, is there no way of discussing this appeal? Is there no mark or criterion, whereby first principles that are truly such, may be distinguished from those that assume the character without a just title? I shall humbly offer in the following propositions what appears to me to be agreeable to truth in these matters, always ready to change my opinion upon conviction.

1st, *First*, I hold it to be certain, and even demonstrable, that all knowledge got by reasoning must be built upon first principles.

This is as certain as that every house must have a foundation. The power of reasoning, in this respect, resembles the mechanical powers or engines; it must have a fixed point to rest upon, otherwise it spends its force in the air, and produces no effect.

When we examine, in the way of analysis, the evidence of any proposition, either we find it self-evident, or it rests upon one or more propositions that support it. The same thing may be said of the propositions that support it; and of those that support them, as far back as we can go. But we cannot go back in this track to infinity. Where then must this analysis stop? It is evident that it must stop only when we come to propositions, which support all that are built upon them, but are themselves supported by none, that is, to self-evident propositions.

Let us again consider a synthetical proof of any kind, where we begin with the premises, and pursue a train of consequences, until we come to the last conclusion, or thing to be proved. Here we must begin, either with self-evident propositions, or with such as have been already proved. When the last is the case, the proof of the propositions, thus assumed, is a

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part of our proof; and the proof is deficient without it. Suppose then the deficiency supplied, and the proof completed, is it not evident that it must set out with self-evident propositions, and that the whole evidence must rest upon them? So that it appears to be demonstrable that, without first principles, analytical reasoning could have no end, and synthetical reasoning could have no beginning; and that every conclusion got by reasoning must rest with its whole weight upon first principles, as the building does upon its foundation.

2dly, A *second* proposition is, that some first principles yield conclusions that are certain, others such as are probable, in various degrees, from the highest probability to the lowest.

In just reasoning, the strength or weakness of the conclusion will always correspond to that of the principles on which it is grounded.

In a matter of testimony, it is self-evident, that the testimony of two is better than that of one, supposing them equal in character, and in their means of knowledge; yet the single testimony may be true, and that which is preferred to it may be false.

When an experiment has succeeded in several trials, and the circumstances have been marked with care, there is a self-evident probability of its succeeding in a new trial; but there is no certainty. The probability, in some cases, is much greater than in others; because, in some cases, it is much easier to observe all the circumstances that may have influence upon the event than in others. And it is possible, that, after many experiments made with care, our expectation may be frustrated in a succeeding one, by the variation of some circumstance that has not, or perhaps could not be observed.

Sir Isaac Newton has laid it down as a first principle in natural philosophy, that a property which has been

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found in all bodies upon which we have had access to make experiments, and which has always been found in its quantity to be in exact proportion to the quantity of matter in every body, is to be held as an universal property of matter.

This principle, as far as I know, has never been called in question. The evidence we have, that all matter is divisible, moveable, solid, and inert, is resolvable into this principle; and if it be not true, we cannot have any rational conviction that all matter has those properties. From the same principle that great man has shown, that we have reason to conclude, that all bodies gravitate toward each other.

This principle, however, has not that kind of evidence which mathematical axioms have. It is not a necessary truth whose contrary is impossible; nor did sir Isaac ever conceive it to be such. And if it should ever be found, by just experiments, that there is any part in the composition of some bodies which has not gravity, the fact, if duly ascertained, must be admitted as an exception to the general law of gravitation.

In games of chance, it is a first principle, that every side of a die has an equal chance to be turned up; and that, in a lottery every ticket has an equal chance of being drawn out. From such first principles as these, which are the best we can have in such matters, we may deduce, by demonstrative reasoning, the precise degree of probability of every event in such games.

But the principles of all this accurate and profound reasoning can never yield a certain conclusion, it being impossible to supply a defect in the first principles by any accuracy in the reasoning that is grounded upon them. As water, by its gravity, can rise no higher in its course than the fountain, however artfully it be conducted; so no conclusion of reasoning can have a greater degree of evidence than the first principles from which it is drawn.

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From these instances, it is evident, that as there are some first principles that yield conclusions of absolute certainty; so there are others that can only yield probable conclusions; and that the lowest degree of probability must be grounded on first principles as well as absolute certainty.

3dly, A *third* proposition is, that it would contribute greatly to the stability of human knowledge, and consequently to the improvement of it, if the first principles upon which the various parts of it are grounded were pointed out and ascertained.

We have ground to think so, both from facts, and from the nature of the thing.

There are two branches of human knowledge, in which this method has been followed, to wit, mathematics and natural philosophy; in mathematics, as far back as we have books. It is in this science only, that, for more than two thousand years since it began to be cultivated, we find no sects, no contrary systems, and hardly any disputes; or, if there have been disputes, they have ended as soon as the animosity of parties subsided, and have never been again revived. The science, once firmly established upon the foundation of a few axioms and definitions, as upon a rock, has grown from age to age, so as to become the loftiest and the most solid fabric that human reason can boast.

Natural philosophy, till less than two hundred years ago, remained in the same fluctuating state with the other sciences. Every new system pulled up the old by the roots. The system builders, indeed, were always willing to accept of the aid of first principles, when they were of their side; but finding them insufficient to support the fabric which their imagination had raised, they were only brought in as auxiliaries, and so intermixed with conjectures, and with lame inductions, that their systems were like Nebuchadnez-

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zar's image, whose feet were partly of iron and partly of clay.

Lord Bacon first delineated the only solid foundation on which natural philosophy can be built; and sir Isaac Newton reduced the principles laid down by Bacon into three or four axioms, which he calls *regulæ philosophandi*. From these, together with the phenomena observed by the senses, which he likewise lays down as first principles, he deduces, by strict reasoning, the propositions contained in the third book of his Principia, and in his Optics; and by this means has raised a fabric in those two branches of natural philosophy, which is not liable to be shaken by doubtful disputation, but stands immoveable upon the basis of self-evident principles.

This fabric has been carried on by the accession of new discoveries; but is no more subject to revolutions.

The disputes about *materia prima*, substantial forms, nature's abhorring a vacuum, and bodies having no gravitation in their proper place, are now no more. The builders in this work are not put to the necessity of holding a weapon in one hand while they build with the other; their whole employment is to carry on the work.

Yet it seems to be very probable, that if natural philosophy had not been reared upon this solid foundation of self-evident principles, it would have been to this day a field of battle, wherein every inch of ground would have been disputed, and nothing fixed and determined.

I acknowledge, that mathematics and natural philosophy, especially the former, have this advantage of most other sciences, that it is less difficult to form distinct and determinate conceptions of the objects about which they are employed; but as this difficulty is not

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insuperable, it affords a good reason, indeed, why other sciences should have a longer infancy; but no reason at all why they may not at last arrive at maturity, by the same steps as those of quicker growth.

The facts I have mentioned may therefore lead us to conclude, that if in other branches of philosophy the first principles were laid down, as has been done in mathematics and natural philosophy, and the subsequent conclusions grounded upon them, this would make it much more easy to distinguish what is solid and well supported from the vain fictions of human fancy.

But laying aside facts, the nature of the thing leads to the same conclusion.

For when any system is grounded upon first principles, and deduced regularly from them, we have a thread to lead us through the labyrinth. The judgment has a distinct and determinate object. The heterogeneous parts being separated, can be examined each by itself.

The whole system is reduced to axioms, definitions, and deductions. These are materials of very different nature, and to be measured by a very different standard; and it is much more easy to judge of each, taken by itself, than to judge of a mass wherein they are kneaded together without distinction. Let us consider how we judge of each of them.

1st, As to definitions, the matter is very easy. They relate only to words, and differences about them may produce different ways of speaking, but can never produce different ways of thinking, while every man keeps to his own definitions.

But as there is not a more plentiful source of fallacies in reasoning than men's using the same word sometimes in one sense and at other times in another, the best means of preventing such fallacies, or of detecting

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them when they are committed, is definitions of words as accurate as can be given.

2dly, As to deductions drawn from principles granted on both sides, I do not see how they can long be a matter of dispute among men who are not blinded by prejudice or partiality: for the rules of reasoning by which inferences may be drawn from premises have been for two thousand years fixed with great unanimity. No man pretends to dispute the rules of reasoning laid down by Aristotle, and repeated by every writer in dialectics.

And we may observe by the way, that the reason why logicians have been so unanimous in determining the rules of reasoning, from Aristotle down to this day, seems to be, that they were by that great genius raised, in a scientific manner, from a few definitions and axioms. It may further be observed, that when men differ about a deduction, whether it follows from certain premises, this I think is always owing to their differing about some first principle. I shall explain this by an example.

Suppose that, from a thing having begun to exist, one man infers that it must have had a cause; another man does not admit the inference. Here it is evident, that the first takes it for a self-evident principle, that every thing which begins to exist must have a cause; the other does not allow this to be self-evident. Let them settle this point, and the dispute will be at an end.

Thus I think it appears, that in matters of science, if the terms be properly explained, the first principles upon which the reasoning is grounded be laid down and exposed to examination, and the conclusions regularly deduced from them, it might be expected, that men of candour and capacity, who love truth, and have patience to examine things coolly, might come to unanimity with

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regard to the force of the deductions, and that their differences might be reduced to those they may have about first principles.

4thly, A fourth proposition is, that nature has not left us destitute of means whereby the candid and honest part of mankind may be brought to unanimity when they happen to differ about first principles.

When men differ about things that are taken to be first principles or self-evident truths, reasoning seems to be at an end. Each party appeals to common sense. When one man's common sense gives one determination, another man's a contrary determination, there seems to be no remedy but to leave every man to enjoy his own opinion. This is a common observation, and I believe a just one, if it be rightly understood.

It is in vain to reason with a man who denies the first principles on which the reasoning is grounded. Thus, it would be in vain to attempt the proof of a proposition in Euclid to a man who denies the axioms. Indeed, we ought never to reason with men who deny first principles from obstinacy and unwillingness to yield to reason.

But is it not possible, that men who really love truth, and are open to conviction, may differ about first principles?

I think it is possible, and that it cannot, without great want of charity, be denied to be possible.

When this happens, every man who believes that there is a real distinction between truth and error, and that the faculties which God has given us are not in their nature fallacious, must be convinced that there is a defect, or a perversion of judgment on the one side or the other.

A man of candour and humility will, in such a case, very naturally suspect his own judgment, so far as to

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be desirous to enter into a serious examination, even of what he has long held as a first principle. He will think it not impossible, that although his heart be upright, his judgment may have been perverted, by education, by authority, by party zeal, or by some other of the common causes of error, from the influence of which neither parts nor integrity exempt the human understanding.

In such a state of mind, so amiable, and so becoming every good man, has nature left him destitute of any rational means by which he may be enabled, either to correct his judgment if it be wrong, or to confirm it if it be right?

I hope it is not so. I hope that, by the means which nature has furnished, controversies about first principles may be brought to an issue, and that the real lovers of truth may come to unanimity with regard to them.

It is true, that, in other controversies, the process by which the truth of a proposition is discovered, or its falsehood detected, is, by showing its necessary connection with first principles, or its repugnancy to them. It is true, likewise, that when the controversy is, whether a proposition be itself a first principle, this process cannot be applied. The truth, therefore, in controversies of this kind, labours under a peculiar disadvantage. But it has advantages of another kind to compensate this.

1st, For, in the *first* place, in such controversies, every man is a competent judge; and therefore it is difficult to impose upon mankind.

To judge of first principles, requires no more than a sound mind free from prejudice, and a distinct conception of the question. The learned and the unlearned, the philosopher and the day labourer, are upon a level, and will pass the same judgment, when they are not misled

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by some bias, or taught to renounce their understanding from some mistaken religious principle.

In matters beyond the reach of common understanding, the many are led by the few, and willingly yield to their authority. But, in matters of common sense, the few must yield to the many, when local and temporary prejudices are removed. No man is now moved by the subtile arguments of Zeno against motion, though perhaps he knows not how to answer them.

The ancient skeptical system furnishes a remarkable instance of this truth. That system, of which Pyrrho was reputed the father, was carried down, through a succession of ages, by very able and acute philosophers, who taught men to believe nothing at all, and esteemed it the highest pitch of human wisdom to withhold assent from every proposition whatsoever. It was supported with very great subtilty and learning, as we see from the writings of Sextus Empiricus, the only author of that sect whose writings have come down to our age. The assault of the skeptics against all science seems to have been managed with more art and address than the defence of the dogmatists.

Yet, as this system was an insult upon the common sense of mankind, it died away of itself; and it would be in vain to attempt to revive it. The modern skepticism is very different from the ancient, otherwise it would not have been allowed a hearing; and, when it has lost the grace of novelty, it will die away also, though it should never be refuted.

The modern skepticism, I mean that of Mr. Hume, is built upon principles which were very generally maintained by philosophers, though they did not see that they led to skepticism. Mr. Hume, by tracing, with great acuteness and ingenuity, the consequences of principles commonly received, has shown that they

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overturn all knowledge, and at last overturn themselves, and leave the mind in perfect suspense.

2dly, *Secondly*, We may observe, that opinions which contradict first principles are distinguished from other errors by this; that they are not only false, but absurd: and, to discountenance absurdity, nature has given us a particular emotion, to wit, that of ridicule, which seems intended for this very purpose of putting out of countenance what is absurd, either in opinion or practice.

This weapon, when properly applied, cuts with as keen an edge as argument. Nature has furnished us with the first to expose absurdity; as with the last to refute error. Both are well fitted for their several offices, and are equally friendly to truth when properly used.

Both may be abused to serve the cause of error: but the same degree of judgment, which serves to detect the abuse of argument, in false reasoning, serves to detect the abuse of ridicule when it is wrongly directed.

Some have from nature a happier talent for ridicule than others; and the same thing holds with regard to the talent of reasoning. Indeed, I conceive there is hardly any absurdity, which, when touched with the pencil of a Lucian, a Swift, or a Voltaire, would not be put out of countenance, when there is not some religious panic, or very powerful prejudice, to blind the understanding.

But it must be acknowledged, that the emotion of ridicule, even when most natural, may be stifled by an emotion of a contrary nature, and cannot operate till that is removed.

Thus, if the notion of sanctity is annexed to an object, it is no longer a laughable matter, and this visor must be pulled off before it appears ridiculous. Hence we see, that notions which appear most ridiculous to all who consider them coolly and indifferently, have

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no such appearance to those who never thought of them, but under the impression of religious awe and dread.

Even where religion is not concerned, the novelty of an opinion to those who are too fond of novelties; the gravity and solemnity with which it is introduced; the opinion we have entertained of the author: its apparent connection with principles already embraced, or subserviency to interests which we have at heart; and, above all, its being fixed in our minds at that time of life when we receive implicitly what we are taught; may cover its absurdity, and fascinate the understanding for a time.

But if ever we are able to view it naked and stripped of those adventitious circumstances from which it borrowed its importance and authority, the natural emotion of ridicule will exert its force. An absurdity can be entertained by men of sense no longer than it wears a mask. When any man is found, who has the skill or the boldness to pull off the mask, it can no longer bear the light; it slinks into dark corners for a while, and then is no more heard of, but as an object of ridicule.

Thus I conceive, that first principles, which are really the dictates of common sense, and directly opposed to absurdities in opinion, will always, from the constitution of human nature, support themselves, and gain, rather than lose ground among mankind.

3dly, *Thirdly*, It may be observed, that although it is contrary to the nature of first principles to admit of direct, or *apodictical* proof; yet there are certain ways of reasoning even about them, by which those that are just and solid may be confirmed, and those that are false may be detected. It may here be proper to mention some of the topics from which we may reason in matters of this kind.

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1st, It is a good argument *ad hominem*, if it can be shown, that a first principle which a man rejects, stands upon the same footing with others which he admits: for, when this is the case, he must be guilty of an inconsistency who holds the one and rejects the other.

Thus the faculties of consciousness, of memory, of external sense, and of reason, are all equally the gifts of nature. No good reason can be assigned for receiving the testimony of one of them, which is not of equal force with regard to the others. The greatest skeptics admit the testimony of consciousness, and allow, that what it testifies is to be held as a first principle. If therefore they reject the immediate testimony of sense, or of memory, they are guilty of an inconsistency.

2dly, A first principle may admit of a proof *ad absurdum*.

In this kind of proof, which is very common in mathematics, we suppose the contradictory proposition to be true. We trace the consequences of that supposition in a train of reasoning; and if we find any of its necessary consequences to be manifestly absurd, we conclude the supposition from which it followed to be false; and therefore its contradictory to be true.

There is hardly any proposition, especially of those that may claim the character of first principles, that stands alone and unconnected. It draws many others along with it in a chain that cannot be broken. He that takes it up must bear the burden of all its consequences; and if that is too heavy for him to bear, he must not pretend to take it up.

3dly, I conceive, that the consent of ages and nations, of the learned and unlearned, ought to have great authority with regard to first principles, where every man is a competent judge.

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Our ordinary conduct in life is built upon first principles, as well as our speculations in philosophy; and every motive to action supposes some belief. When we find a general agreement among men, in principles that concern human life, this must have great authority with every sober mind that loves truth.

It is pleasant to observe the fruitless pains which bishop Berkeley takes to show, that his system of the non-existence of a material world did not contradict the sentiments of the vulgar, but those only of the philosophers.

With good reason he dreaded more to oppose the authority of vulgar opinion in a matter of this kind, than all the schools of philosophers.

Here perhaps it will be said, What has authority to do in matters of opinion? Is truth to be determined by most votes? Or is authority to be again raised out of its grave to tyrannise over mankind?

I am aware that, in this age, an advocate for authority has a very unfavourable plea; but I wish to give no more to authority than is its due.

Most justly do we honour the names of those benefactors to mankind who have contributed more or less to break the yoke of that authority which deprives men of the natural, the unalienable right of judging for themselves; but while we indulge a just animosity against this authority, and against all who would subject us to its tyranny, let us remember how common the folly is, of going from one faulty extreme into the opposite.

Authority, though a very tyrannical mistress to private judgment, may yet, on some occasions, be a useful handmaid; this is all she is entitled to, and this is all I plead in her behalf.

The justice of this plea will appear by putting a case in a science, in which, of all sciences, authority is acknowledged to have least weight.

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Suppose a mathematician has made a discovery in that science, which he thinks important; that he has put his demonstration in just order; and, after examining it with an attentive eye, has found no flaw in it; I would ask, Will there not be still in his breast some diffidence, some jealousy lest the ardour of invention may have made him overlook some false step? This must be granted.

He commits his demonstration to the examination of a mathematical friend, whom he esteems a competent judge, and waits with impatience the issue of his judgment. Here I would ask again, Whether the verdict of his friend, according as it has been favourable or unfavourable, will not greatly increase or diminish his confidence in his own judgment? Most certain it will, and it ought.

If the judgment of his friend agrees with his own, especially if it be confirmed by two or three able judges, he rests secure of his discovery without further examination; but if it be unfavourable, he is brought back into a kind of suspense, until the part that is suspected undergoes a new and a more rigorous examination.

I hope what is supposed in this case is agreeable to nature, and to the experience of candid and modest men on such occasions: yet here we see a man's judgment, even in a mathematical demonstration, conscious of some feebleness in itself, seeking the aid of authority to support it, greatly strengthened by that authority, and hardly able to stand erect against it, without some new aid.

Society in judgment, of those who are esteemed fair and competent judges, has effects very similar to those of civil society; it gives strength and courage to every individual; it removes that timidity which is as natur-

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ally the companion of solitary judgment, as of a solitary man in the state of nature.

Let us judge for ourselves therefore, but let us not disdain to take that aid from the authority of other competent judges, which a mathematician thinks it necessary to take in that science, which of all sciences has least to do with authority.

In a matter of common sense, every man is no less a competent judge, than a mathematician is in a mathematical demonstration; and there must be a great presumption that the judgment of mankind, in such a matter, is the natural issue of those faculties which God has given them. Such a judgment can be erroneous only when there is some cause of the error, as general as the error is: when this can be shown to be the case, I acknowledge it ought to have its due weight. But to suppose a general deviation from truth among mankind in things self-evident, of which no cause can be assigned, is highly unreasonable.

Perhaps it may be thought impossible to collect the general opinion of men upon any point whatsoever; and therefore, that this authority can serve us in no stead in examining first principles. But I apprehend, that, in many cases, this is neither impossible nor difficult.

Who can doubt whether men have universally believed the existence of a material world? who can doubt whether men have universally believed, that every change that happens in nature must have a cause? who can doubt whether men have universally believed, that there is a right and a wrong in human conduct; some things that merit blame, and others that are entitled to approbation?

The universality of these opinions, and of many such that might be named, is sufficiently evident, from the whole tenor of human conduct, as far as our acquaint-

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ance reaches, and from the history of all ages and nations of which we have any records.

There are other opinions that appear to be universal, from what is common in the structure of all languages.

Language is the express image and picture of human thoughts; and from the picture we may draw some certain conclusions concerning the original.

We find in all languages the same parts of speech; we find nouns, substantive and adjective; verbs active and passive, in their various tenses, numbers, and moods. Some rules of syntax are the same in all languages.

Now what is common in the structure of languages, indicates an uniformity of opinion in those things upon which that structure is grounded.

The distinction between substances, and the qualities belonging to them; between thought and the being that thinks; between thought, and the objects of thought; is to be found in the structure of all languages: and therefore, systems of philosophy, which abolish those distinctions, wage war with the common sense of mankind.

We are apt to imagine, that those who formed languages were no metaphysicians; but the first principles of all sciences are the dictates of common sense, and lie open to all men; and every man who has considered the structure of language in a philosophical light, will find infallible proofs that those who have framed it, and those who use it with understanding, have the power of making accurate distinctions, and of forming general conceptions, as well as philosophers. Nature has given those powers to all men, and they can use them when their occasions require it; but they leave it to the philosophers to give names to them, and to descant upon their nature. In like

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manner, Nature has given eyes to all men, and they can make good use of them; but the structure of the eye, and the theory of vision, is the business of philosophers.

4thly, Opinions that appear so early in the minds of men, that they cannot be the effect of education, or of false reasoning, have a good claim to be considered as first principles. Thus the belief we have, that the persons about us are living and intelligent beings, is a belief for which perhaps we can give some reason, when we are able to reason; but we had this belief before we could reason, and before we could learn it by instruction. It seems therefore to be an immediate effect of our constitution.

The *last* topic I shall mention is, when an opinion is so necessary in the conduct of life, that without the belief of it, a man must be led into a thousand absurdities in practice, such an opinion, when we can give no other reason for it, may safely be taken for a first principle.

Thus I have endeavoured to show, that although first principles are not capable of direct proof, yet differences, that may happen with regard to them among men of candour, are not without remedy; that nature has left us destitute of means by which we may discover errors of this kind; and that there are ways of reasoning, with regard to first principles by which those that are truly such may be distinguished from vulgar errors or prejudices.

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CHAP. V.

THE FIRST PRINCIPLES OF CONTINGENT TRUTHS.

"SURELY, says bishop Berkeley, it is a work well deserving our pains, to make a strict inquiry concerning the first principles of knowledge; to sift and examine them on all sides." What was said in the last chapter, is intended both to show the importance of this inquiry, and to make it more easy.

But, in order that such an inquiry may be actually made, it is necessary that the first principles of knowledge be distinguished from other truths, and presented to view, that they may be sifted and examined on all sides. In order to this end, I shall attempt a detail of those I take to be such, and of the reasons why I think them entitled to that character.

If the enumeration should appear to some redundant, to others deficient, and to others both; if things, which I conceive to be first principles, should to others appear to be vulgar errors, or to be truths which derive their evidence from other truths, and therefore not first principles; in these things every man must judge for himself. I shall rejoice to see an enumeration more perfect in any or in all of those respects; being persuaded, that the agreement of men of judgment and candour in first principles, would be of no less consequence to the advancement of knowledge in general, than the agreement of mathematicians in the axioms of geometry has been to the advancement of that science.

The truths that fall within the compass of human knowledge, whether they be self-evident, or deduced from those that are self-evident, may be reduced to two classes. They are either necessary and immuta-

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ble truths, whose contrary is impossible; or they are contingent and mutable, depending upon some effect of will and power, which had a beginning, and may have an end.

That a cone is the third part of a cylinder of the same base and the same altitude, is a necessary truth. It depends not upon the will and power of any being. It is immutably true, and the contrary impossible. That the sun is the centre, about which the earth, and the other planets of our system, perform their revolutions, is a truth; but it is not a necessary truth. It depends upon the power and will of that Being who made the sun and all the planets, and who gave them those motions that seemed best to him.

If all truths were necessary truths, there would be no occasion for different tenses in the verbs by which they are expressed. What is true in the present time, would be true in the past and future; and there would be no change or variation of any thing in nature.

We use the present tense in expressing necessary truths; but it is only because there is no flexion of the verb which includes all times. When I say that three is the half of six, I use the present tense only; but I mean to express not only what now is, but what always was, and always will be; and so every proposition is to be understood by which we mean to express a necessary truth. Contingent truths are of another nature. As they are mutable, they may be true at one time, and not at another; and therefore the expression of them must include some point or period of time.

If language had been a contrivance of philosophers, they would probably have given some flexion to the indicative mood of verbs, which extended to all times past, present, and future; for such a flexion only would be fit to express necessary propositions, which have no relation to time. But there is no language, as

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far as I know, in which such a flexion of verbs is to be found. Because the thoughts and discourse of men are seldom employed about necessary truths, but commonly about such as are contingent; languages are fitted to express the last rather than the first.

The distinction commonly made between abstract truths, and those that express matters of fact, or real existences, coincides in a great measure, but not altogether, with that between necessary and contingent truths. The necessary truths that fall within our knowledge are for the most part abstract truths. We must except the existence and nature of the Supreme Being, which is necessary. Other existences are the effects of will and power. They had a beginning, and are mutable. Their nature is such as the Supreme Being was pleased to give them. Their attributes and relations must depend upon the nature God has given them; the powers with which he has endowed them; and the situation in which he has placed them.

The conclusions deduced by reasoning from first principles, will commonly be necessary or contingent, according as the principles are from which they are drawn. On the one hand, I take it to be certain, that whatever can, by just reasoning, be inferred from a principle that is necessary, must be a necessary truth; and that no contingent truth can be inferred from principles that are necessary.

Thus, as the axioms in mathematics are all necessary truths; so are all the conclusions drawn from them; that is, the whole body of that science. But from no mathematical truth can we deduce the existence of any thing; not even of the objects of the science.

On the other hand, I apprehend there are very few cases in which we can, from principles that are contingent, deduce truths that are necessary. I can only recollect one instance of this kind, namely, that, from

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the existence of things contingent and mutable, we can infer the existence of an immutable and eternal cause of them.

As the minds of men are occupied much more about truths that are contingent than about those that are necessary, I shall first endeavour to point out the principles of the former kind.

1st. *First*, Then, I hold, as a first principle, the existence of every thing of which I am conscious.

Consciousness is an operation of the understanding of its own kind, and cannot be logically defined. The objects of it are our present pains, our pleasures, our hopes, our fears, our desires, our doubts, our thoughts of every kind; in a word, all the passions, and all the actions and operations of our own minds, while they are present. We may remember them when they are past; but we are conscious of them only while they are present.

When a man is conscious of pain, he is certain of its existence; when he is conscious that he doubts, or believes, he is certain of the existence of those operations.

But the irresistible conviction he has of the reality of those operations is not the effect of reasoning; it is immediate and intuitive. The existence therefore of those passions and operations of our minds, of which we are conscious, is a first principle, which nature requires us to believe upon her authority.

If I am asked to prove that I cannot be deceived by consciousness, to prove that it is not a fallacious sense; I can find no proof. I cannot find any antecedent truth from which it is deduced, or upon which its evidence depends. It seems to disdain any such derived authority, and to claim my assent in its own right.

If any man could be found so frantic as to deny that he thinks, while he is conscious of it; I may wonder,

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I may laugh, or I may pity him, but I cannot reason the matter with him. We have no common principles from which we may reason, and therefore can never join issue in an argument.

This, I think, is the only principle of common sense that has never directly been called in question. It seems to be so firmly rooted in the minds of men, as to retain its authority with the greatest skeptics. Mr. Hume, after annihilating body and mind, time and space, action and causation, and even his own mind, acknowledges the reality of the thoughts, sensations, and passions of which he is conscious.

No philosopher has attempted by any hypothesis to account for this consciousness of our own thoughts, and the certain knowledge of their real existence which accompanies it. By this they seem to acknowledge, that this at least is an original power of the mind; a power by which we not only have ideas, but original judgments, and the knowledge of real existence.

I cannot reconcile this immediate knowledge of the operations of our own minds with Mr. Locke's theory, that all knowledge consists in perceiving the agreement and disagreement of ideas. What are the ideas, from whose comparison the knowledge of our own thoughts results? Or what are the agreements or disagreements which convince a man that he is in pain when he feels it?

Neither can I reconcile it with Mr. Hume's theory, that to believe the existence of any thing, is nothing else than to have a strong and lively conception of it; or, at most, that belief is only some modification of the idea which is the object of belief. For not to mention, that propositions, not ideas, are the object of belief; in all that variety of thoughts and passions, of which we are conscious, we believe the existence of the weak as

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well as of the strong, the faint as well as the lively. No modification of the operations of our minds disposes us to the least doubt of their real existence.

As therefore the real existence of our thoughts, and of all the operations and feelings of our own minds, is believed by all men; as we find ourselves incapable of doubting it, and as incapable of offering any proof of it, it may justly be considered as a first principle, or dictate of common sense.

But although this principle rests upon no other, a very considerable and important branch of human knowledge rests upon it.

For from this source of consciousness is derived all that we know, and indeed all that we can know, of the structure, and of the powers of our own minds; from which we may conclude, that there is no branch of knowledge that stands upon a firmer foundation; for surely no kind of evidence can go beyond that of consciousness.

How does it come to pass then, that in this branch of knowledge there are so many and so contrary systems? so many subtile controversies that are never brought to an issue, and so little fixed and determined? Is it possible that philosophers should differ most where they have the surest means of agreement; where every thing is built upon a species of evidence which all men acquiesce in, and hold to be the most certain?

This strange phenomenon may, I think, be accounted for, if we distinguish between consciousness and reflection, which are often improperly confounded.

The first is common to all men at all times, but is insufficient of itself to give us clear and distinct notions of the operations of which we are conscious, and of their mutual relations, and minute distinctions. The second, to wit, attentive reflection upon those operations, making them objects of thought, surveying them at-

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tentively, and examining them on all sides, is so far from being common to all men, that it is the lot of very few. The greatest part of men, either through want of capacity, or from other causes, never reflect attentively upon the operations of their own minds. The habit of this reflection, even in those whom nature has fitted for it, is not to be attained without much pains and practice. We can know nothing of the immediate objects of sight, but by the testimony of our eyes; and I apprehend, that if mankind had found as great difficulty in giving attention to the objects of sight, as they find in attentive reflection upon the operations of their own minds, our knowledge of the first might have been in as backward a state as our knowledge of the last.

But this darkness will not last for ever. Light will arise upon this benighted part of the intellectual globe. When any man is so happy as to delineate the powers of the human mind as they really are in nature, men that are free from prejudice, and capable of reflection, will recognise their own features in the picture; and then the wonder will be, how things so obvious could be so long wrapped up in mystery and darkness; how men could be carried away by false theories and conjectures, when the truth was to be found in their own breasts if they had but attended to it.

2dly, Another first principle, I think, is, That the thoughts of which I am conscious, are the thoughts of a being which I call *myself*, my *mind*, my *person*.

The thoughts and feelings of which we are conscious are continually changing, and the thought of this moment is not the thought of the last; but something which I call myself, remains under this change of thought. This self has the same relation to all the successive thoughts I am conscious of, they are all my thoughts; and every thought which is not my thought, must be the thought of some other person.

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If any man asks a proof of this, I confess I can give none; there is an evidence in the proposition itself which I am unable to resist. Shall I think, that thought can stand by itself without a thinking being? Or that ideas can feel pleasure or pain? My nature dictates to me that it is impossible.

And that nature has dictated the same to all men, appears from the structure of all languages: for in all languages men have expressed thinking, reasoning, willing, loving, hating, by personal verbs, which from their nature require a person who thinks, reasons, wills, loves, or hates. From which it appears, that men have been taught by nature to believe that thought requires a thinker, reason a reasoner, and love a lover.

Here we must leave Mr. Hume, who conceives it to be a vulgar error, that besides the thoughts we are conscious of, there is a mind which is the subject of those thoughts. If the mind be any thing else than impressions and ideas, it must be a word without a meaning. The mind therefore, according to this philosopher, is a word which signifies a bundle of perceptions; or, when he defines it more accurately, "It is that succession of related ideas and impressions, of which we have an intimate memory and consciousness."

I am, therefore, that succession of related ideas and impressions of which I have the intimate memory and consciousness.

But who is the *I* that has this memory and consciousness of a succession of ideas and impressions? Why, it is nothing but that succession itself.

Hence I learn, that this succession of ideas and impressions intimately remembers, and is conscious of itself. I would wish to be further instructed, whether the impressions remember and are conscious of the ideas, or the ideas remember and are conscious of the impres-

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sions, or if both remember and are conscious of both? And whether the ideas remember those that come after them, as well as those that were before them? These are questions naturally arising from this system, that have not yet been explained.

This, however, is clear, that this succession of ideas and impressions, not only remembers and is conscious, but that it judges, reasons, affirms, denies; nay, that it eats and drinks, and is sometimes merry, and sometimes sad.

If these things can be ascribed to a succession of ideas and impressions, in a consistency with common sense, I should be very glad to know what is nonsense.

The scholastic philosophers have been wittily ridiculed, by representing them as disputing upon this question, *Num chimæra bombinans in vacuo possit comedere secundas intentiones?* And I believe the wit of man cannot invent a more ridiculous question. But, if Mr. Hume's philosophy be admitted, this question deserves to be treated more gravely: for if, as we learn from this philosophy, a succession of ideas and impressions may eat, and drink, and be merry, I see no good reason why a chimera, which if not the same, is of kin to an idea, may not chew the cud upon that kind of food, which the schoolmen call second intentions.

3dly, Another first principle I take to be, That those things did really happen which I distinctly remember.

This has one of the surest marks of a first principle; for no man ever pretended to prove it, and yet no man in his wits calls it in question; the testimony of memory, like that of consciousness, is immediate; it claims our assent upon its own authority.

Suppose that a learned counsel, in defence of a client against the concurring testimony of witnesses of credit, should insist upon a new topic to invalidate the testimony. "Admitting," says he, "the integrity of the

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witnesses, and that they distinctly remember what they have given in evidence; it does not follow that the prisoner is guilty. It has never been proved that the most distinct memory may not be fallacious. Show me any necessary connection between that act of the mind which we call memory, and the past existence of the event remembered. No man has ever offered a shadow of argument to prove such a connection; yet this is one link of the chain of proof against the prisoner; and if it have no strength, the whole proof falls to the ground. Until this, therefore, be made evident, until it can be proved, that we may safely rest upon the testimony of memory for the truth of past events, no judge or jury can justly take away the life of a citizen upon so doubtful a point."

I believe we may take it for granted, that this argument from a learned counsel would have no other effect upon the judge or jury, than to convince them that he was disordered in his judgment. Counsel is allowed to plead every thing for a client that is fit to persuade or to move; yet I believe no counsel ever had the boldness to plead this topic. And for what reason? For no other reason, surely, but because it is absurd. Now, what is absurd at the bar, is so in the philosopher's chair. What would be ridiculous, if delivered to a jury of honest, sensible citizens, is no less so when delivered gravely in a philosophical dissertation.

Mr. Hume has not, as far as I remember, directly called in question the testimony of memory; but he has laid down the premises by which its authority is overturned, leaving it to his reader to draw the conclusion.

He labours to show, that the belief or assent which always attends the memory and senses is nothing but the vivacity of those perceptions which they present.

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He shows very clearly, that this vivacity gives no ground to believe the existence of external objects. And it is obvious, that it can give as little ground to believe the past existence of the objects of memory.

Indeed the theory concerning ideas, so generally received by philosophers, destroys all the authority of memory, as well as the authority of the senses. Des Cartes, Malebranche, and Locke, were aware that this theory made it necessary for them to find out arguments to prove the existence of external objects, which the vulgar believe upon the bare authority of their senses; but those philosophers were not aware, that this theory made it equally necessary for them to find arguments to prove the existence of things past, which we remember, and to support the authority of memory.

All the arguments they advanced to support the authority of our senses, were easily refuted by bishop Berkeley and Mr. Hume, being indeed very weak and inconclusive. And it would have been as easy to answer every argument they could have brought, consistent with their theory, to support the authority of memory.

For, according to that theory, the immediate object of memory, as well as of every other operation of the understanding, is an idea present in the mind. And, from the present existence of this idea of memory I am left to infer, by reasoning, that six months, or six years ago, there did exist an object similar to this idea.

But what is there in the idea that can lead me to this conclusion? What mark does it bear of the date of its archetype? Or what evidence have I that it had an archetype, and that it is not the first of its kind?

Perhaps it will be said, that this idea or image in the mind must have had a cause.

I admit, that if there is such an image in the mind it must have had a cause, and a cause able to produce

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the effect; but what can we infer from its having a cause? Does it follow that the effect is a type, an image, a copy of its cause? Then it will follow, that a picture is an image of the painter, and a coach of the coachmaker.

A past event may be known by reasoning, but that is not remembering it. When I remember a thing distinctly, I disdain equally to hear reasons for it or against it. And so I think does every man in his senses.

4thly, Another first principle is our own personal identity and continued existence, as far back as we remember any thing distinctly.

This we know immediately, and not by reasoning. It seems, indeed, to be a part of the testimony of memory. Every thing we remember has such a relation to ourselves, as to imply necessarily our existence at the time remembered. And there cannot be a more palpable absurdity than that a man should remember what happened before he existed. He must therefore have existed as far back as he remembers any thing distinctly, if his memory be not fallacious. This principle, therefore, is so connected with the last mentioned, that it may be doubtful whether both ought not to be included in one. Let every one judge of this as he sees reason. The proper notion of identity, and the sentiments of Mr. Locke on this subject, have been considered before under the head of memory.

5thly, Another first principle is, That those things do really exist which we distinctly perceive by our senses, and are what we perceive them to be.

It is too evident to need proof, that all men are by nature led to give implicit faith to the distinct testimony of their senses, long before they are capable of any bias from prejudices of education or of philosophy.

How came we at first to know that there are certain beings about us whom we call father, and mother, and

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sisters, and brothers, and nurse? Was it not by the testimony of our senses? How did these persons convey to us any information or instruction? Was it not by means of our senses?

It is evident we can have no communication, no correspondence or society with any created being, but by means of our senses. And until we rely upon their testimony, we must consider ourselves as being alone in the universe, without any fellow creature, living or inanimate, and be left to converse with our own thoughts.

Bishop Berkeley surely did not duly consider, that it is by means of the material world that we have any correspondence with thinking beings, or any knowledge of their existence, and that by depriving us of the material world, he deprived us at the same time of family, friends, country, and every human creature; of every object of affection, esteem or concern, except ourselves.

The good bishop surely never intended this. He was too warm a friend, too zealous a patriot, and too good a Christian, to be capable of such a thought. He was not aware of the consequences of his system, and therefore they ought not to be imputed to him; but we must impute them to the system itself. It stifles every generous and social principle.

When I consider myself as speaking to men who hear me, and can judge of what I say, I feel that respect which is due to such an audience. I feel an enjoyment in a reciprocal communication of sentiments with candid and ingenious friends, and my soul blesses the Author of my being, who has made me capable of this manly and rational entertainment.

But the bishop shows me, that this is all a dream; that I see not a human face; that all the objects I see, and hear, and handle, are only the ideas of my

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own mind; ideas are my only companions. Cold company, indeed! Every social affection freezes at the thought.

But, my lord bishop, are there no minds left in the universe but my own?

Yes, indeed; it is only the material world that is annihilated; every thing else remains as it was.

This seems to promise some comfort in my forlorn solitude. But do I see those minds? No. Do I see their ideas? No. Nor do they see me or my ideas. They are then no more to me than the inhabitants of Solomon's isles, or of the moon; and my melancholy solitude returns. Every social tie is broken, and every social affection is stifled.

This dismal system, which, if it could be believed, would deprive men of every social comfort, a very good bishop, by strict and accurate reasoning, deduced from the principles commonly received by philosophers concerning ideas. The fault is not in the reasoning, but in the principles, from which it is drawn.

All the arguments urged by Berkeley and Hume against the existence of a material world are grounded upon this principle, that we do not perceive external objects themselves, but certain images or ideas in our own minds. But this is no dictate of common sense, but directly contrary to the sense of all who have not been taught it by philosophy.

We have before examined the reasons given by philosophers, to prove that ideas, and not external objects, are the immediate objects of perception, and the instances given to prove the senses fallacious. Without repeating what has before been said upon those points, we shall only here observe, that if external objects be perceived immediately, we have the same reason to believe their existence as philosophers have to believe the existence of ideas, while they hold them to be the immediate objects of perception.

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6thly, Another first principle, I think, is, That we have some degree of power over our actions, and the determinations of our will.

All power must be derived from the fountain of power, and of every good gift. Upon his good pleasure its continuance depends, and it is always subject to his control.

Beings to whom God has given any degree of power, and understanding to direct them to the proper use of it, must be accountable to their Maker. But those who are intrusted with no power, can have no account to make; for all good conduct consists in the right use of power; all bad conduct in the abuse of it.

To call to account a being who never was intrusted with any degree of power, is an absurdity no less than it would be to call to an account an inanimate being. We are sure, therefore, if we have any account to make to the Author of our being, that we must have some degree of power, which, as far as it is properly used, entitles us to his approbation; and, when abused, renders us obnoxious to his displeasure.

It is not easy to say in what way we first get the notion or idea of power. It is neither an object of sense nor of consciousness. We see events, one succeeding another; but we see not the power by which they are produced. We are conscious of the operations of our minds; but power is not an operation of mind. If we had no notions but such as are furnished by the external senses, and by consciousness, it seems to be impossible that we should ever have any conception of power. Accordingly Mr. Hume, who has reasoned the most accurately upon this hypothesis, denies that we have any idea of power, and clearly refutes the account given by Mr. Locke of the origin of this idea.

But it is in vain to reason from a hypothesis against a fact, the truth of which every man may see by at-

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tending to his own thoughts. It is evident, that all men, very early in life, not only have an idea of power, but a conviction that they have some degree of it in themselves: for this conviction is necessarily implied in many operations of mind, which are familiar to every man, and without which no man can act the part of a reasonable being.

1st, It is implied in every act of volition. "Volition, it is plain," says, Mr. Locke, "is an act of the mind, knowingly exerting that dominion which it takes itself to have over any part of the man, by employing it in, or withholding it from any particular action." Every volition, therefore, implies a conviction of power to do the action willed. A man may desire to make a visit to the moon, or to the planet Jupiter; but nothing but insanity could make him will to do so. And if even insanity produced this effect, it must be by making him think it to be in his power.

2dly, This conviction is implied in all deliberation; for no man in his wits deliberates whether he shall do what he believes not to be in his power.

3dly, The same conviction is implied in every resolution or purpose formed in consequence of deliberation. A man may as well form a resolution to pull the moon out of her sphere, as to do the most insignificant action which he believes not to be in his power. The same thing may be said of every promise or contract wherein a man plights his faith; for he is not an honest man who promises what he does not believe he has power to perform.

As these operations imply a belief of some degree of power in ourselves; so there are others equally common and familiar, which imply a like belief with regard to others.

When we impute to a man any action or omission as a ground of approbation or of blame, we must believe

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he had power to do otherwise. The same is implied in all advice, exhortation, command, and rebuke, and in every case, in which we rely upon his fidelity in performing any engagement, or executing any trust.

It is not more evident that mankind have a conviction of the existence of a material world, than that they have the conviction of some degree of power in themselves, and in others; every one over his own actions, and the determinations of his will: a conviction so early, so general, and so interwoven with the whole of human conduct, that it must be the natural effect of our constitution, and intended by the Author of our being to guide our actions.

It resembles our conviction of the existence of a material world in this respect also, that even those who reject it in speculation, find themselves under a necessity of being governed by it in their practice; and thus it will always happen when philosophy contradicts first principles.

7thly, Another first principle is, that the natural faculties, by which we distinguish truth from error, are not fallacious. If any man should demand a proof of this, it is impossible to satisfy him. For suppose it should be mathematically demonstrated, this would signify nothing in this case; because, to judge of a demonstration, a man must trust his faculties, and take for granted the very thing in question.

If a man's honesty were called in question, it would be ridiculous to refer it to the man's own word, whether he be honest or not. The same absurdity there is in attempting to prove, by any kind of reasoning, probable or demonstrative, that our reason is not fallacious, since the very point in question is, whether reasoning may be trusted.

If a skeptic should build his skepticism upon this foundation, that all our reasoning, and judging powers

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are fallacious in their nature, or should resolve at least to withhold assent until it be proved that they are not; it would be impossible by argument to beat him out of this strong hold, and he must even be left to enjoy his skepticism.

Des Cartes certainly made a false step in this matter; for having suggested this doubt among others, that whatever evidence he might have from his consciousness, his senses, his memory, or his reason; yet possibly some malignant being had given him those faculties on purpose to impose upon him; and therefore, that they are not to be trusted without a proper voucher: to remove this doubt, he endeavours to prove the being of a Deity who is no deceiver; whence he concludes, that the faculties he had given him are true and worthy to be trusted.

It is strange that so acute a reasoner did not perceive, that in this reasoning there is evidently a begging of the question.

For if our faculties be fallacious, why may they not deceive us in this reasoning as well as in others? And if they are to be trusted in this instance without a voucher, why not in others?

Every kind of reasoning for the veracity of our faculties, amounts to no more than taking their own testimony for their veracity; and this we must do implicitly, until God give us new faculties to sit in judgment upon the old; and the reason why Des Cartes satisfied himself with so weak an argument for the truth of his faculties, most probably was, that he never seriously doubted of it.

If any truth can be said to be prior to all others in the order of nature, this seems to have the best claim; because in every instance of assent, whether upon intuitive, demonstrative, or probable evidence, the truth of our faculties is taken for granted, and is, as it

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were, one of the premises on which our assent is grounded.

How then come we to be assured of this fundamental truth on which all others rest? Perhaps evidence, as in many other respects it resembles light, so in this also, that as light, which is the discoverer of all visible objects, discovers itself at the same time: so evidence, which is the voucher for all truth, vouches for itself at the same time.

This, however, is certain, that such is the constitution of the human mind, that evidence discerned by us, forces a corresponding degree of assent. And a man who perfectly understood a just syllogism, without believing that the conclusion follows from the premises, would be a greater monster than a man born without hands or feet.

We are born under a necessity of trusting to our reasoning and judging powers; and a real belief of their being fallacious cannot be maintained for any considerable time by the greatest skeptic, because it is doing violence to our constitution. It is like a man's walking upon his hands, a feat which some men upon occasion can exhibit; but no man ever made a long journey in this manner. Cease to admire his dexterity, and he will, like other men, betake himself to his legs.

We may here take notice of a property of the principle under consideration, that seems to be common to it with many other first principles, and which can hardly be found in any principle that is built solely upon reasoning; and that is, that in most men it produces its effect without ever being attended to, or made an object of thought. No man ever thinks of this principle, unless when he considers the grounds of skepticism; yet it invariably governs his opinions. When a man in the common course of life gives credit to the

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testimony of his senses, his memory, or his reason, he does not put the question to himself, whether these faculties may deceive him; yet the trust he reposes in them supposes an inward conviction, that, in that instance at least, they do not deceive him.

It is another property of this and of many first principles, that they force assent in particular instances, more powerfully than when they are turned into a general proposition. Many skeptics have denied every general principle of science, excepting perhaps the existence of our present thoughts; yet these men reason, and refute, and prove, they assent and dissent in particular cases. They use reasoning to overturn all reasoning, and judge that they ought to have no judgment, and see clearly that they are blind. Many have, in general, maintained that the senses are fallacious, yet there never was found a man so skeptical as not to trust his senses in particular instances when his safety required it; and it may be observed of those who have professed skepticism, that their skepticism lies in generals, while in particulars they are no less dogmatical than others.

8thly, Another first principle relating to existence, is, that there is life and intelligence in our fellow men with whom we converse.

As soon as children are capable of asking a question, or of answering a question, as soon as they show the signs of love, of resentment, or of any other affection, they must be convinced that those with whom they have this intercourse are intelligent beings.

It is evident they are capable of such intercourse long before they can reason. Every one knows, that there is a social intercourse between the nurse and the child before it is a year old. It can, at that age, understand many things that are said to it.

It can, by signs, ask and refuse, threaten and supplicate. It clings to its nurse in danger, enters into

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her grief and joy, is happy in her soothing and caresses, and unhappy in her displeasure: that these things cannot be without a conviction in the child that the nurse is an intelligent being, I think must be granted.

Now, I would ask how a child of a year old comes by this conviction? Not by reasoning surely, for children do not reason at that age. Nor is it by external senses, for life and intelligence are not objects of the external senses.

By what means, or upon what occasions, nature first gives this information to the infant mind, is not easy to determine. We are not capable of reflecting upon our own thoughts at that period of life, and before we attain this capacity, we have quite forgot how or on what occasion we first had this belief; we perceive it in those who are born blind, and in others who are born deaf; and therefore nature has not connected it solely either with any object of sight, or with any object of hearing. When we grow up to the years of reason and reflection, this belief remains. No man thinks of asking himself what reason he has to believe that his neighbour is a living creature. He would be not a little surprised if another person should ask him so absurd a question; and perhaps could not give any reason which would not equally prove a watch or a puppet to be a living creature.

But, though you should satisfy him of the weakness of the reasons he gives for his belief, you cannot make him in the least doubtful. This belief stands upon another foundation than that of reasoning; and therefore, whether a man can give good reasons for it or not, it is not in his power to shake it off.

Setting aside this natural conviction, I believe the best reason we can give, to prove that other men are living and intelligent, is, that their words and actions indicate like powers of understanding as we are con-

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scious of in ourselves. The very same argument applied to the works of nature leads us to conclude, that there is an intelligent Author of nature, and appears equally strong and obvious in the last case as in the first; so that it may be doubted whether men, by the mere exercise of reasoning, might not as soon discover the existence of a Deity, as that other men have life and intelligence.

The knowledge of the last is absolutely necessary to our receiving any improvement by means of instruction and example; and, without these means of improvement, there is no ground to think that we should ever be able to acquire the use of our reasoning powers. This knowledge, therefore, must be antecedent to reasoning, and therefore must be a first principle.

It cannot be said, that the judgments we form concerning life and intelligence in other beings are at first free from error: but the errors of children in this matter lie on the safe side; they are prone to attribute intelligence to things inanimate. These errors are of small consequence, and are gradually corrected by experience and ripe judgment. But the belief of life and intelligence in other men, is absolutely necessary for us before we are capable of reasoning; and therefore the Author of our being has given us this belief antecedently to all reasoning.

9thly, Another first principle I take to be, That certain features of the countenance, sounds of the voice, and gestures of the body, indicate certain thoughts and dispositions of mind.

That many operations of the mind have their natural signs in the countenance, voice, and gesture, I suppose every man will admit. *Omnis enim motus animi*, says Cicero, *suum quemdam habet a nâtura vultum, et vocem et gestum.* The only question is, whether we

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understand the signification of those signs, by the constitution of our nature, by a kind of natural perception similar to the perceptions of sense; or whether we gradually learn the signification of such signs from experience, as we learn that smoke is a sign of fire, or that the freezing of water is a sign of cold? I take the first to be the truth.

It seems to me incredible, that the notions men have of the expression of features, voice, and gesture, are entirely the fruit of experience. Children, almost as soon as born, may be frighted, and thrown into fits by a threatening or angry tone of voice. I knew a man who could make an infant cry, by whistling a melancholy tune in the same or in the next room; and again, by altering his key, and the strain of his music, could make the child leap and dance for joy.

It is not by experience surely that we learn the expression of music; for its operation is commonly strongest the first time we hear it. One air expresses mirth and festivity; so that, when we hear it, it is with difficulty we can forbear to dance. Another is sorrowful and solemn. One inspires with tenderness and love; another with rage and fury.

> Hear how Timotheus's vary'd lays surprise,
> And bid alternate passions fall and rise;
> While at each change, the son of Lybian Jove
> Now burns with glory, and then melts with love.
> Now his fierce eyes with sparkling fury glow,
> Now sighs steal out, and tears begin to flow.
> Persians and Greeks, like turns of nature, found,
> And the world's victor stood subdu'd by sound.

It is not necessary that a man have studied either music or the passions, in order to his feeling these effects. The most ignorant and unimproved, to whom nature has given a good ear, feel them as strongly as the most knowing.

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The countenance and gesture have an expression no less strong and natural than the voice. The first time one sees a stern and fierce look, a contracted brow, and a menacing posture, he concludes that the person is inflamed with anger. Shall we say, that previous to experience, the most hostile countenance has as agreeable an appearance as the most gentle and benign? This surely would contradict all experience; for we know that an angry countenance will fright a child in the cradle. Who has not observed, that children, very early, are able to distinguish what is said to them in jest from what is said in earnest, by the tone of the voice, and the features of the face? They judge by these natural signs, even when they seem to contradict the artificial.

If it were by experience that we learn the meaning of features, and sound, and gesture, it might be expected that we should recollect the time when we first learned those lessons, or, at least, some of such a multitude.

Those who give attention to the operations of children, can easily discover the time when they have their earliest notices from experience, such as that flame will burn, or that knives will cut. But no man is able to recollect in himself, or to observe in others, the time when the expression of the face, voice, and gesture, were learned.

Nay, I apprehend that it is impossible that this should be learned from experience.

When we see the sign, and see the thing signified always conjoined with it, experience may be the instructor, and teach us how that sign is to be interpreted. But how shall experience instruct us when we see the sign only, when the thing signified is invisible? Now is this the case here; the thoughts and passions of the mind, as well as the mind itself, are invisi-

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ble, and therefore their connection with any sensible sign cannot be first discovered by experience; there must be some earlier source of this knowledge.

Nature seems to have given to men a faculty or sense, by which this connection is perceived. And the operation of this sense is very analogous to that of the external senses.

When I grasp an ivory ball in my hand, I feel a certain sensation of touch. In the sensation, there is nothing external, nothing corporeal. The sensation is neither round nor hard; it is an act of feeling of the mind, from which I cannot, by reasoning, infer the existence of any body. But, by the constitution of my nature, the sensation carries along with it the conception and belief of a round hard body really existing in my hand.

In like manner, when I see the features of an expressive face, I see only figure and colour variously modified. But, by the constitution of my nature, the visible object brings along with it the conception and belief of a certain passion or sentiment in the mind of the person.

In the former case, a sensation of touch is the sign, and the hardness and roundness of the body I grasp, is signified by that sensation. In the latter case, the features of the person is the sign, and the passion or sentiment is signified by it.

The power of natural signs, to signify the sentiments and passions of the mind, is seen in the signs of dumb persons, who can make themselves to be understood in a considerable degree, even by those who are wholly unexperienced in that language.

It is seen in the traffic which has been frequently carried on between people that have no common acquired language. They can buy and sell, and ask and refuse, and show a friendly or hostile disposition by natural signs.

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It was seen still more in the actors among the ancients who performed the gesticulation upon the stage, while others recited the words. To such a pitch was this art carried, that we are told, Cicero and Roscius used to contend whether the orator could express any thing by words, which the actor could not express in dumb show by gesticulation; and whether the same sentence or thought could not be acted in all the variety of ways in which the orator could express it in words.

But the most surprising exhibition of this kind, was that of the pantomimes among the Romans, who acted plays, or scenes of plays, without any recitation, and yet could be perfectly understood.

And here it deserves our notice, that although it required much study and practice in the pantomimes to excel in their art; yet it required neither study nor practice in the spectators to understand them. It was a natural language, and therefore understood by all men, whether Romans, Greeks, or Barbarians, by the learned and the unlearned.

Lucian relates, that a king, whose dominions bordered upon the Euxine sea, happening to be at Rome in the reign of Nero, and having seen a pantomime act, begged him of Nero that he might use him in his intercourse with all the nations in his neighbourhood: for, said he, I am obliged to employ I don't know how many interpreters, in order to keep a correspondence with neighbours who speak many languages, and do not understand mine; but this fellow will make them all understand him.

For these reasons, I conceive, it must be granted, not only that there is a connection established by nature between certain signs in the countenance, voice, and gesture, and the thoughts and passions of the mind; but also, that by our constitution, we understand the

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meaning of those signs, and from the sign conclude the existence of the thing signified.

10thly, Another first principle appears to me to be, That there is a certain regard due to human testimony in matters of fact, and even to human authority in matters of opinion.

Before we are capable of reasoning about testimony or authority, there are many things which it concerns us to know, for which we can have no other evidence. The wise Author of nature has planted in the human mind a propensity to rely upon this evidence before we can give a reason for doing so. This, indeed, puts our judgment almost entirely in the power of those who are about us, in the first period of life; but this is necessary both to our preservation and to our improvement. If children were so framed, as to pay no regard to testimony or to authority, they must, in the literal sense, perish for lack of knowledge. It is not more necessary that they should be fed before they can feed themselves, than that they should be instructed in many things, before they can discover them by their own judgment.

But when our faculties ripen, we find reason to check that propensity, to yield to testimony and to authority, which was so necessary and so natural in the first period of life. We learn to reason about the regard due to them, and see it to be a childish weakness to lay more stress upon them than reason justifies. Yet, I believe, to the end of life, most men are more apt to go into this extreme than into the contrary; and the natural propensity still retains some force.

The natural principles, by which our judgments and opinions are regulated before we come to the use of reason, seem to be no less necessary to such a being as man, than those natural instincts which the Author of nature has given us to regulate our actions during that period.

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11thly, There are many events depending upon the will of man, in which there is a self-evident probability, greater or less, according to circumstances.

There may be in some individuals such a degree of phrenzy and madness, that no man can say what they may or may not do. Such persons we find it necessary to put under restraint, that, as far as possible, they may be kept from doing harm to themselves or to others. They are not considered as reasonable creatures, or members of society. But, as to men who have a sound mind, we depend upon a certain degree of regularity in their conduct; and could put a thousand different cases, wherein we could venture, ten to one, that they will act in such a way, and not in the contrary.

If we had no confidence in our fellow men that they will act such a part in such circumstances, it would be impossible to live in society with them: for that which makes men capable of living in society, and uniting in a political body under government, is, that their actions will always be regulated in a great measure by the common principles of human nature.

It may always be expected, that they will regard their own interest and reputation, and that of their families and friends; that they will repel injuries, and have some sense of good offices; and that they will have some regard to truth and justice, so far at least as not to swerve from them without temptation.

It is upon such principles as these, that all political reasoning is grounded. Such reasoning is never demonstrative; but it may have a very great degree of probability, especially when applied to great bodies of men.

12thly, The last principle of contingent truths I mention, is, That, in the phenomena of nature, what is to be, will probably be like to what has been in similar circumstances.

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We must have this conviction as soon as we are capable of learning any thing from experience; for all experience is grounded upon a belief that the future will be like the past. Take away this principle, and the experience of an hundred years makes us no wiser with regard to what is to come.

This is one of those principles, which, when we grow up and observe the course of nature, we can confirm by reasoning. We perceive that nature is governed by fixed laws, and that if it were not so, there could be no such thing as prudence in human conduct; there would be no fitness in any means to promote an end; and what, on one occasion, promoted it, might as probably, on another occasion, obstruct it.

But the principle is necessary for us before we are able to discover it by reasoning, and therefore is made a part of our constitution, and produces its effects before the use of reason.

This principle remains in all its force when we come to the use of reason: but we learn to be more cautious in the application of it. We observe more carefully the circumstances on which the past event depended, and learn to distinguish them from those which were accidentally conjoined with it.

In order to this, a number of experiments, varied in their circumstances, is often necessary. Sometimes a single experiment is thought sufficient to establish a general conclusion. Thus, when it was once found, that in a certain degree of cold, quicksilver became a hard and malleable metal, there was good reason to think, that the same degree of cold will always produce this effect to the end of the world.

I need hardly mention, that the whole fabric of natural philosophy is built upon this principle, and, if it be taken away, must tumble down to the foundation.

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Therefore the great Newton lays it down as an axiom, or as one of his laws of philosophizing, in these words, *Effectuum naturalium ejusdem generis easdem esse causas.* This is what every man assents to as soon as he understands it, and no man asks a reason for it. It has therefore the most genuine marks of a first principle.

It is very remarkable, that although all our expectation of what is to happen in the course of nature is derived from the belief of this principle, yet no man thinks of asking what is the ground of this belief.

Mr. Hume, I think, was the first who put this question; and he has shown clearly and invincibly, that it is neither grounded upon reasoning, nor has that kind of intuitive evidence which mathematical axioms have. It is not a necessary truth.

He has endeavoured to account for it upon his own principles. It is not my business at present to examine the account he has given of this universal belief of mankind; because, whether his account of it be just or not, and I think it is not, yet, as this belief is universal among mankind, and is not grounded upon any antecedent reasoning, but upon the constitution of the mind itself, it must be acknowledged to be a first principle, in the sense in which I use that word.

I do not at all affirm, that those I have mentioned are all the first principles from which we may reason concerning contingent truths. Such enumerations, even when made after much reflection, are seldom perfect.

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CHAP. VI.

FIRST PRINCIPLES OF NECESSARY TRUTHS.

About most of the first principles of necessary truths there has been no dispute, and therefore it is the less necessary to dwell upon them. It will be sufficient to divide them into different classes; to mention some, by way of specimen, in each class; and to make some remarks on those of which the truth has been called in question.

They may, I think, most properly be divided according to the science to which they belong.

1st, There are some first principles that may be called grammatical; such as, that every adjective in a sentence must belong to some substantive expressed or understood; that every complete sentence must have a verb.

Those who have attended to the structure of language, and formed distinct notions of the nature and use of the various parts of speech, perceive, without reasoning, that these, and many other such principles, are necessarily true.

2dly, There are logical axioms; such as, that any contexture of words which does not make a proposition, is neither true nor false; that every proposition is either true or false; that no proposition can be both true and false at the same time; that reasoning in a circle proves nothing; that whatever may be truly affirmed of a genus, may be truly affirmed of all the species, and all the individuals belonging to that genus.

3dly, Every one knows there are mathematical axioms. Mathematicians have, from the days of Euclid, very wisely laid down the axioms or first principles on which they reason. And the effect which this appears to have had upon the stability and happy progress of this science, gives no small encouragement to attempt

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to lay the foundation of other sciences in a similar manner, as far as we are able.

Mr. Hume has discovered, as he apprehends, a weak side, even in mathematical axioms; and thinks, that it is not strictly true, for instance, that two right lines can cut one another in one point only.

The principle he reasons from is, that every simple idea is a copy of a preceding impression; and therefore, in its precision and accuracy, can never go beyond its original. From which he reasons in this manner: no man ever saw or felt a line so straight, that it might not cut another, equally straight, in two or more points. Therefore there can be no idea of such a line.

The ideas that are most essential to geometry, such as, those of equality, of a straight line, and of a square surface, are far, he says, from being distinct and determinate; and the definitions destroy the pretended demonstrations. Thus, mathematical demonstration is found to be a rope of sand.

I agree with this acute author, that, if we could form no notion of points, lines, and surfaces, more accurate than those we see and handle, there could be no mathematical demonstration.

But every man that has understanding, by analyzing, by abstracting, and compounding the rude materials exhibited by his senses, can fabricate, in his own mind, those elegant and accurate forms of mathematical lines, surfaces, and solids.

If a man finds himself incapable of forming a precise and determinate notion of the figure which mathematicians call a cube, he not only is no mathematician, but is incapable of being one. But, if he has a precise and determinate notion of that figure, he must perceive, that it is terminated by six mathematical surfaces, perfectly square, and perfectly equal. He must perceive, that these surfaces are terminated by twelve mathematical

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lines, perfectly straight, and perfectly equal, and that those lines are terminated by eight mathematical points.

When a man is conscious of having these conceptions distinct and determinate, as every mathematician is, it is in vain to bring metaphysical arguments to convince him that they are not distinct. You may as well bring arguments to convince a man racked with pain, that he feels no pain.

Every theory that is inconsistent with our having accurate notions of mathematical lines, surfaces, and solids, must be false. Therefore it follows, that they are not copies of our impressions.

The Medicean Venus is not a copy of the block of marble from which it was made. It is true, that the elegant statue was formed out of the rude block, and that too by a manual operation, which, in a literal sense, we may call abstraction. Mathematical notions are formed in the understanding by an abstraction of another kind, out of the rude perceptions of our senses.

As the truths of natural philosophy are not necessary truths, but contingent, depending upon the will of the Maker of the world, the principles from which they are deduced must be of the same nature, and therefore belong not to this class.

4thly, I think there are axioms, even in matters of taste. Notwithstanding the variety found among men, in taste, there are, I apprehend, some common principles, even in matters of this kind. I never heard of any man who thought it a beauty in a human face to want a nose, or an eye, or to have the mouth on one side. How many ages have passed since the days of Homer! Yet, in this long tract of ages, there never was found a man who took Thersites for a beauty.

The *fine arts* are very properly called the *arts of taste*, because the principles of both are the same;

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and in the fine arts, we find no less agreement among those who practise them than among other artists.

No work of taste can be either relished or understood by those who do not agree with the author in the principles of taste.

Homer, and Virgil, and Shakespeare, and Milton, had the same taste; and all men who have been acquainted with their writings, and agree in the admiration of them, must have the same taste.

The fundamental rules of poetry, and music, and painting, and dramatic action and eloquence, have been always the same, and will be so to the end of the world.

The variety we find among men in matters of taste is easily accounted for, consistently with what we have advanced.

There is a taste that is acquired, and a taste that is natural. This holds, with respect both to the external sense of taste, and the internal. Habit and fashion have a powerful influence upon both.

Of tastes that are natural, there are some that may be called rational, others that are merely animal.

Children are delighted with brilliant and gaudy colours, with romping and noisy mirth, with feats of agility, strength, or cunning; and savages have much the same taste as children.

But there are tastes that are more intellectual. It is the dictate of our rational nature, that love and admiration are misplaced when there is no intrinsic worth in the object.

In those operations of taste which are rational, we judge of the real worth and excellence of the object, and our love or admiration is guided by that judgment. In such operations, there is judgment as well as feeling, and the feeling depends upon the judgment we form of the object.

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I do not maintain that taste, so far as it is acquired, or so far as it is merely animal, can be reduced to principles. But as far as it is founded on judgment, it certainly may.

The virtues, the graces, the muses, have a beauty that is intrinsic. It lies not in the feelings of the spectator, but in the real excellence of the object. If we do not perceive their beauty, it is owing to the defect, or to the perversion of our faculties.

And as there is an original beauty in certain moral and intellectual qualities, so there is a borrowed and derived beauty in the natural signs and expressions of such qualities.

The features of the human face, the modulations of the voice, and the proportions, attitudes, and gesture of the body, are all natural expressions of good or bad qualities of the person, and derive a beauty or a deformity from the qualities which they express.

Works of art, express some quality of the artist, and often derive an additional beauty from their utility or fitness for their end.

Of such things, there are some that ought to please, and others that ought to displease. If they do not, it is owing to some defect in the spectator. But what has real excellence will always please those who have a correct judgment, and a sound heart.

The sum of what has been said upon this subject is, that, setting aside the tastes which men acquire by habit and fashion, there is a natural taste, which is partly animal, and partly rational. With regard to the first, all we can say is, that the Author of nature, for wise reasons, has formed us so as to receive pleasure from the contemplation of certain objects, and disgust from others, before we are capable of perceiving any real excellence in the one, or defect in the other. But that taste which we may call rational, is that part

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of our constitution by which we are made to receive pleasure from the contemplation of what we conceive to be excellent in its kind; the pleasure being annexed to this judgment, and regulated by it. This taste may be true or false, according as it is founded on a true or false judgment. And if it may be true or false, it must have first principles.

5thly, There are also first principles in morals.

That an unjust action has more demerit than an ungenerous one: that a generous action has more merit than merely a just one: that no man ought to be blamed for what it was not in his power to hinder: that we ought not to do to others what we would think unjust or unfair to be done to us in like circumstances: these are moral axioms, and many others might be named which appear to me to have no less evidence than those of mathematics.

Some, perhaps, may think, that our determinations, either in matters of taste or in morals, ought not to be accounted necessary truths: that they are grounded upon the constitution of that faculty which we call taste, and of that which we call the moral sense or conscience; which faculties might have been so constituted as to have given determinations different, or even contrary to those they now give: that as there is nothing sweet or bitter in itself, but according as it agrees or disagrees with the external sense called taste; so there is nothing beautiful or ugly in itself, but according as it agrees or disagrees with the internal sense, which we also call taste; and nothing morally good or ill in itself, but according as it agrees or disagrees with our moral sense.

This, indeed, is a system, with regard to morals and taste, which has been supported in modern times by great authorities. And if this system be true, the consequence must be, that there can be no principles,

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either of taste or of morals, that are necessary truths. For, according to this system, all our determinations, both with regard to matters of taste, and with regard to morals, are reduced to matters of fact. I mean to such as these, that by our constitution we have on such occasions, certain agreeable feelings, and on other occasions, certain disagreeable feelings.

But I cannot help being of a contrary opinion, being persuaded, that a man who determined that polite behaviour has great deformity, and that there is great beauty in rudeness and ill breeding, would judge wrong whatever his feelings were.

In like manner, I cannot help thinking, that a man who determined that there is more moral worth in cruelty, perfidy, and injustice, than in generosity, justice, prudence, and temperance, would judge wrong whatever his constitution was.

And if it be true that there is judgment in our determinations of taste and of morals, it must be granted, that what is true or false in morals, or in matters of taste, is necessarily so. For this reason, I have ranked the first principles of morals and of taste under the class of necessary truths.

6thly, The last class of first principles I shall mention, we may call metaphysical.

I shall particularly consider three of these, because they have been called in question by Mr. Hume.

The *first* is, That the qualities which we perceive by our senses must have a subject, which we call body, and that the thoughts we are conscious of must have a subject, which we call mind.

It is not more evident that two and two make four, than it is that figure cannot exist, unless there be something that is figured, nor motion without something that is moved. I not only perceive figure and motion, but I perceive them to be qualities: they have a necessary

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relation to something in which they exist as their subject. The difficulty which some philosophers have found in admitting this, is entirely owing to the theory of ideas. A subject of the sensible qualities which we perceive by our senses, is not an idea either of sensation or of consciousness; therefore, say they, we have no such idea. Or, in the style of Mr. Hume, from what impression is the idea of substance derived? It is not a copy of any impression; therefore there is no such idea.

The distinction between sensible qualities, and the substance to which they belong, and between thought, and the mind that thinks, is not the invention of philosophers; it is found in the structure of all languages, and therefore must be common to all men who speak with understanding. And, I believe, no man, however skeptical he may be in speculation, can talk on the common affairs of life for half an hour, without saying things that imply his belief of the reality of these distinctions.

Mr. Locke acknowledges, "That we cannot conceive how simple ideas of sensible qualities should subsist alone; and therefore we suppose them to exist in, and to be supported by, some common subject." In his Essay, indeed, some of his expressions seem to leave it dubious, whether this belief, that sensible qualities must have a subject, be a true judgment, or a vulgar prejudice. But in his first letter to the bishop of Worcester, he removes this doubt, and quotes many passages of his Essay, to show that he neither denied, nor doubted of the existence of substances, both thinking and material; and that he believed their existence on the same ground the bishop did, to wit, "on the repugnancy to our conceptions, that modes and accidents should subsist by themselves." He offers no proof of this repugnancy; nor, I think, can any proof of it be given, because it is a first principle.

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It were to be wished that Mr. Locke, who inquired so accurately, and so laudably into the origin, certainty, and extent of human knowledge, had turned his attention more particularly to the origin of these two opinions which he firmly believed; to wit, that sensible qualities must have a subject, which we call body, and that thought must have a subject, which we call mind. A due attention to these two opinions which govern the belief of all men, even of skeptics in the practice of life, would probably have led him to perceive, that sensation and consciousness are not the only sources of human knowledge; and that there are principles of belief in human nature, of which we can give no other account, but that they necessarily result from the constitution of our faculties; and that if it were in our power to throw off their influence upon our practice and conduct, we could neither speak nor act like reasonable men.

We cannot give a reason why we believe even our sensations to be real, and not fallacious; why we believe what we are conscious of; why we trust any of our natural faculties. We say, it must be so, it cannot be otherwise. This expresses only a strong belief, which is indeed the voice of nature, and which therefore in vain we attempt to resist. But if, in spite of nature, we resolve to go deeper, and not to trust our faculties, without a reason to show that they cannot be fallacious; I am afraid, that seeking to become wise, and to be as gods, we shall become foolish, and being unsatisfied with the lot of humanity, we shall throw off common sense.

The *second* metaphysical principle, I mention, is that whatever begins to exist, must have a cause which produced it.

Philosophy is indebted to Mr. Hume in this respect among others, that, by calling in question many of the

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first principles of human knowledge, he has put speculative men upon inquiring more carefully than was done before, into the nature of the evidence upon which they rest. Truth can never suffer by a fair inquiry; it can bear to be seen naked and in the fullest light; and the strictest examination will always turn out in the issue to its advantage. I believe Mr. Hume was the first who ever called in question, whether things that begin to exist must have a cause.

With regard to this point, we must hold one of these three things, either that it is an opinion, for which we have no evidence, and which men have foolishly taken up without ground; or, *secondly*, that it is capable of direct proof by argument; or, *thirdly*, that it is self-evident, and needs no proof, but ought to be received as an axiom, which cannot, by reasonable men, be called in question.

The first of these suppositions would put an end to all philosophy, to all religion, to all reasoning that would carry us beyond the objects of sense, and to all prudence in the conduct of life.

As to the second supposition, that this principle may be proved by direct reasoning, I am afraid we shall find the proof extremely difficult, if not altogether impossible.

I know only of three or four arguments that have been urged by philosophers, in the way of abstract reasoning, to prove, that things which begin to exist must have a cause.

One is offered by Mr. Hobbes, another by Dr. Samuel Clarke, another by Mr. Locke. Mr. Hume, in his Treatise of Human Nature, has examined them all; and, in my opinion, has shown, that they take for granted the thing to be proved; a kind of false reasoning, which men are very apt to fall into when they attempt to prove what is self-evident.

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It has been thought, that, although this principle does not admit of proof from abstract reasoning, it may be proved from experience, and may be justly drawn by induction from instances that fall within our observation.

I conceive this method of proof will leave us in great uncertainty, for these three reasons:

1st, Because the proposition to be proved, is not a contingent, but a necessary proposition. It is not that things which begin to exist commonly have a cause, or even that they always in fact have a cause; but that they must have a cause, and cannot begin to exist without a cause.

Propositions of this kind, from their nature, are incapable of proof by induction. Experience informs us only of what is, or has been, not of what must be; and the conclusion must be of the same nature with the premises.

For this reason, no mathematical proposition can be proved by induction. Though it should be found by experience in a thousand cases, that the area of a plane triangle is equal to the rectangle under the altitude and half the base, this would not prove that it must be so in all cases, and cannot be otherwise; which is what the mathematician affirms.

In like manner, though we had the most ample experimental proof, that things which have begun to exist had a cause, this would not prove that they must have a cause. Experience may show us what is the established course of nature, but can never show what connections of things are in their nature necessary.

2dly, General maxims, grounded on experience, have only a degree of probability proportioned to the extent of our experience, and ought always to be understood so as to leave room for exceptions, if future experience shall discover any such.

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The law of gravitation has as full a proof from experience and induction as any principle can be supposed to have. Yet if any philosopher should by clear experiment, show that there is a kind of matter in some bodies which does not gravitate, the law of gravitation ought to be limited by that exception.

Now it is evident, that men have never considered the principle of the necessity of causes, as a truth of this kind which may admit of limitation or exception; and therefore it has not been received upon this kind of evidence.

3dly, I do not see that experience could satisfy us that every change in nature actually has a cause.

In the far greatest part of the changes in nature that fall within our observation, the causes are unknown; and therefore, from experience, we cannot know whether they have causes or not.

Causation is not an object of sense. The only experience we can have of it, is in the consciousness we have of exerting some power in ordering our thoughts and actions. But this experience is surely too narrow a foundation for a general conclusion, that all things that have had, or shall have a beginning, must have a cause.

For these reasons, this principle cannot be drawn from experience, any more than from abstract reasoning.

The *third* supposition is, That it is to be admitted as a first or self evident principle. Two reasons may be urged for this.

1st, The universal consent of mankind, not of philosophers only, but of the rude and unlearned vulgar.

Mr. Hume, as far as I know, was the first that ever expressed any doubt of this principle. And when we consider that he has rejected every principle of human knowledge, excepting that of consciousness, and has not

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even spared the axioms of mathematics, his authority is of small weight.

Indeed, with regard to first principles, there is no reason why the opinion of a philosopher should have more authority than that of another man of common sense, who has been accustomed to judge in such cases. The illiterate vulgar are competent judges; and the philosopher has no prerogative in matters of this kind; but he is more liable than they to be misled by a favourite system, especially if it is his own.

Setting aside the authority of Mr. Hume, what has philosophy been employed in, since men first began to philosophize, but in the investigation of the causes of things? This it has always professed, when we trace it to its cradle. It never entered into any man's thought, before the philosopher we have mentioned, to put the previous question, whether things have a cause or not? Had it been thought possible that they might not, it may be presumed, that, in the variety of absurd and contradictory causes assigned, some one would have had recourse to this hypothesis.

They could conceive the world to arise from an egg, from a struggle between love and strife, between moisture and drought, between heat and cold; but they never supposed that it had no cause. We know not any Atheistic sect that ever had recourse to this topic, though by it they might have evaded every argument that could be brought against them, and answered all objections to their system.

But rather than adopt such an absurdity, they contrived some imaginary cause; such as chance, a concourse of atoms, or necessity, as the cause of the universe.

The accounts which philosophers have given of particular phenomena, as well as of the universe in general, proceed upon the same principle. That every

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phenomenon must have a cause, was always taken for granted. *Nil turpius physico*, says Cicero, *quam fieri sine causa quicquam dicere.* Though an academic, he was dogmatical in this. And Plato, the father of the academy, was no less so. "Πάντι γὰρ ἀδύνατον χωρὶς αἰτίας γένεσιν σχεῖν." Timeus. It is impossible that any thing should have its origin without a cause.

I believe Mr. Hume was the first who ever held the contrary. This, indeed, he avows, and assumes the honour of the discovery. "It is," says he, "a maxim in philosophy, that whatever begins to exist, must have a cause of existence. This is commonly taken for granted in all reasonings, without any proof given or demanded. It is supposed to be founded on intuition, and to be one of those maxims, which, though they may be denied with the lips, it is impossible for men in their hearts really to doubt of. But, if we examine this maxim by the idea of knowledge, above explained, we shall discover in it no mark of such intuitive certainty." The meaning of this seems to be, that it did not suit with his theory of intuitive certainty, and therefore he excludes it from that privilege.

The vulgar adhere to this maxim as firmly and universally as the philosophers. Their superstitions have the same origin as the systems of philosophers, to wit, a desire to know the causes of things. *Felix qui potuit rerum cognoscere causas*, is the universal sense of men; but to say that any thing can happen without a cause, shocks the common sense of a savage.

This universal belief of mankind is easily accounted for, if we allow that the necessity of a cause of every event is obvious to the rational powers of a man. But it is impossible to account for it otherwise. It cannot be ascribed to education, to systems of philosophy, or to priestcraft. One would think, that a philosopher who takes it to be a general delusion or prejudice,

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would endeavour to show from what causes in human nature such a general error may take its rise. But I forget that Mr. Hume might answer upon his own principles, that since things may happen without a cause, this error and delusion of men may be universal without any cause.

A second reason why I conceive this to be a first principle, is, That mankind not only assent to it in speculation, but that the practice of life is grounded upon it in the most important matters, even in cases where experience leave us doubtful; and it is impossible to act with common prudence if we set it aside.

In great families there are so many bad things done by a certain personage called *nobody*, that it is proverbial, that there is a nobody about every house who does a great deal of mischief; and even where there is the exactest inspection and government, many events will happen of which no other author can be found: So that, if we trust merely to experience in this matter, nobody will be found to be a very active person, and to have no inconsiderable share in the management of affairs. But whatever countenance this system may have from experience, it is too shocking to common sense to impose upon the most ignorant. A child knows that when his top, or any of his playthings are taken away, it must be done by somebody. Perhaps it would not be difficult to persuade him that it was done by some invisible being, but that it should be done by nobody he cannot believe.

Suppose a man's house to be broke open, his money and jewels taken away: such things have happened times innumerable without any apparent cause; and were he only to reason from experience in such a case, how must he behave? He must put in one scale the instances wherein a cause was found of such an event, and in the other scale, the instances wherein no cause

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was found, and the preponderant scale must determine, whether it be most probable that there was a cause of this event, or that there was none. Would any man of common understanding have recourse to such an expedient to direct his judgment?

Suppose a man to be found dead on the highway, his skull fractured, his body pierced with deadly wounds, his watch and money carried off. The coroner's jury sits upon the body, and the question is put, What was the cause of this man's death, was it accident, or *felo de se*, or murder by persons unknown? Let us suppose an adept in Mr. Hume's philosophy to make one of the jury, and that he insists upon the previous question, whether there was any cause of the event; or whether it happened without a cause?

Surely, upon Mr. Hume's principles, a great deal might be said upon this point; and, if the matter is to be determined by past experience, it is dubious on which side the weight of argument might stand. But we may venture to say, that, if Mr. Hume had been of such a jury, he would have laid aside his philosophical principles, and acted according to the dictates of common prudence.

Many passages might be produced, even in Mr. Hume's philosophical writings, in which he, unawares, betrays the same inward conviction of the necessity of causes, which is common to other men. I shall mention only one, in the Treatise of Human Nature, and in that part of it where he combats this very principle. "As to those impressions," says he, "which arise from the senses, their ultimate cause is, in my opinion, perfectly inexplicable by human reason; and it will always be impossible to decide with certainty, whether they arise immediately from the object, or are produced by the creative power of the mind, or are derived from the Author of our being."

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Among these alternatives, he never thought of their not arising from any cause.

The arguments which Mr. Hume offers, to prove that this is not a self-evident principle, are three. *First*, That all certainty arises from a comparison of ideas, and a discovery of their unalterable relations, none of which relations imply this proposition, That whatever has a beginning must have a cause of existence. This theory of certainty has been examined before, in chap. 3. of this Essay.

The *second* argument is, that whatever we can conceive is possible. This has likewise been examined.

The *third* argument is, that what we call a cause, is only something antecedent to, and always conjoined with the effect. This is also one of Mr. Hume's peculiar doctrines, which we may have occasion to consider afterward. It is sufficient here to observe, that we may learn from it that night is the cause of day, and day the cause of night: for no two things have more constantly followed each other since the beginning of the world.

The *last* metaphysical principle I mention, which is opposed by the same author, is, That design, and intelligence in the cause, may be inferred with certainty, from marks or signs of it in the effect.

Intelligence, design, and skill, are not objects of the external senses, nor can we be conscious of them in any person but ourselves. Even in ourselves, we cannot, with propriety, be said to be conscious of the natural or acquired talents we possess. We are conscious only of the operations of mind in which they are exerted. Indeed, a man comes to know his own mental abilities, just as he knows another man's, by the effects they produce, when there is occasion to put them to exercise.

A man's wisdom is known to us only by the signs of it in his conduct; his eloquence by the signs of it

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in his speech. In the same manner we judge of his virtue, of his fortitude, and of all his talents and qualities of mind.

Yet it is to be observed, that we judge of men's talents with as little doubt or hesitation as we judge of the immediate objects of sense.

One person, we are sure, is a perfect idiot; another who feigns idiocy to screen himself from punishment, is found upon trial to have the understanding of a man, and to be accountable for his conduct. We perceive one man to be open, another cunning; one to be ignorant, another very knowing; one to be slow of understanding, another quick. Every man forms such judgments of those he converses with; and the common affairs of life depend upon such judgments. We can as little avoid them as we can avoid seeing what is before our eyes.

From this it appears, that it is no less a part of the human constitution, to judge of men's characters, and of their intellectual powers, from the signs of them in their actions and discourse, than to judge of corporeal objects by our senses: that such judgments are common to the whole human race that are endowed with understanding; and that they are absolutely necessary in the conduct of life.

Now, every judgment of this kind we form, is only a particular application of the general principle, that intelligence, wisdom, and other mental qualities in the cause, may be inferred from their marks or signs in the effect.

The actions and discourses of men are effects, of which the actors and speakers are the causes. The effects are perceived by our senses; but the causes are behind the scene. We only conclude their existence and their degrees from our observation of the effects.

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From wise conduct we infer wisdom in the cause; from brave actions we infer courage; and so in other cases.

This inference is made with perfect security by all men. We cannot avoid it; it is necessary in the ordinary conduct of life; it has therefore the strongest marks of being a first principle.

Perhaps some may think that this principle may be learned either by reasoning or by experience, and therefore that there is no ground to think it a first principle.

If it can be shown to be got by reasoning by all, or the greater part of those who are governed by it, I shall very readily acknowledge that it ought not to be esteemed a first principle. But I apprehend the contrary appears from very convincing arguments.

1st, The principle is too universal to be the effect of reasoning. It is common to philosophers and to the vulgar; to the learned and the most illiterate; to the civilized and to the savage: and of those who are governed by it, not one in ten thousand can give a reason for it.

2dly, We find philosophers, ancient and modern, who can reason excellently in subjects that admit of reasoning, when they have occasion to defend this principle, not offering reasons for it, or any *medium* of proof, but appealing to the common sense of mankind; mentioning particular instances, to make the absurdity of the contrary opinion more apparent, and sometimes using the weapons of wit and ridicule, which are very proper weapons for refuting absurdities, but altogether improper in points that are to be determined by reasoning.

To confirm this observation, I shall quote two authors, an ancient and a modern, who have more expressly undertaken the defence of this principle than any others I remember to have met with, and whose good

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sense and ability to reason, where reasoning is proper, will not be doubted.

The first is Cicero, whose words, lib. 1. cap. 13. *De divinatione*, may be thus translated. "Can any thing done by chance have all the marks of design? Four dice may by chance turn up four aces; but do you think that four hundred dice, thrown by chance, will turn up four hundred aces? Colours thrown upon canvas without design may have some similitude to a human face; but do you think they might make as beautiful a picture as that of the Coan Venus? A hog turning up the ground with his nose may make something of the form of the letter A; but do you think that a hog might describe on the ground the Andromache of Ennius? Carneades imagined, that in the stone quarries at Chios he found, in a stone that was split, a representation of the head of a little pan, or sylvan deity. I believe he might find a figure not unlike; but surely not such a one as you would say had been formed by an excellent sculptor like Scopas. For so, verily, the case is, that chance never perfectly imitates design." Thus Cicero.

Now, in all this discourse I see very good sense, and what is apt to convince every unprejudiced mind; but I see not in the whole a single step of reasoning. It is barely an appeal to every man's common sense.

Let us next see how the same point is handled by the excellent archbishop Tillotson, 1st Sermon, vol. 1.

"For I appeal to any man of reason, whether any thing can be more unreasonable, than obstinately to impute an effect to chance which carries in the face of it all the arguments and characters of design? Was ever any considerable work, in which there was required a great variety of parts, and an orderly and regular adjustment of these parts done by chance? Will chance fit means to ends, and that in ten thousand instances, and not fail in any one? How often might a man, after

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he had jumbled a set of letters in a bag, fling them out upon the ground before they would fall into an exact poem, yea or so much as make a good discourse in prose? And may not a little book be as easily made as this great volume of the world? How long might a man sprinkle colours upon canvas with a careless hand before they would make the exact picture of a man? And is a man easier made by chance than his picture? How long might twenty thousand blind men, which should be sent out from the remote parts of England, wander up and down before they would all meet upon Salisbury plains, and fall into rank and file in the exact order of an army? And yet this is much more easy to be imagined than how the innumerable blind parts of matter should rendezvous themselves into a world. A man that sees Henry the Seventh's chapel at Westminster, might, with as good reason maintain, yea, and much better, considering the vast difference between that little structure and the huge fabric of the world, that it was never contrived or built by any man, but that the stones did by chance grow into those curious figures into which we see them to have been cut and graven; and that upon a time, as tales usually begin, the materials of that building, the stone, mortar, timber, iron, lead, and glass, happily met together and very fortunately ranged themselves into that delicate order in which we see them now so close compacted, that it must be a very great chance that parts them again. What would the world think of a man that should advance such an opinion as this, and write a book for it? If they would do him right, they ought to look upon him as mad. But yet he might maintain this opinion with a little more reason than any man can have to say that the world was made by chance, or that the first men grew out of the earth, as plants do now. For can any thing be more ridiculous and against all reason, than to ascribe the

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production of men to the first fruitfulness of the earth, without so much as one instance or experiment in any age or history to countenance so monstrous a supposition? The thing is at first sight so gross and palpable, that no discourse about it can make it more apparent. And yet these shameful beggars of principles, who give this precarious account of the original of things, assume to themselves to be the men of reason, the great wits of the world, the only cautious and wary persons, who hate to be imposed upon, that must have convincing evidence for every thing, and can admit nothing without a clear demonstration for it."

In this passage, the excellent author takes what I conceive to be the proper method of refuting an absurdity, by exposing it in different lights, in which every man of common understanding perceives it to be ridiculous. And although there is much good sense, as well as wit, in the passage I have quoted, I cannot find one *medium* of proof in the whole.

I have met with one or two respectable authors who draw an argument from the doctrine of chances, to show how improbable it is that a regular arrangement of parts should be the effect of chance, or that it should not be the effect of design.

I do not object to this reasoning; but I would observe, that the doctrine of chances is a branch of mathematics little more than an hundred years old. But the conclusion drawn from it has been held by all men from the beginning of the world. It cannot, therefore, be thought, that men have been led to this conclusion by that reasoning. Indeed, it may be doubted whether the first principle upon which all the mathematical reasoning about chances is grounded, is more self-evident than this conclusion drawn from it, or whether it is not a particular instance of that general conclusion.

We are next to consider whether we may not learn this truth from experience, that effects which have all

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the marks and tokens of design must proceed from a designing cause.

I apprehend that we cannot learn this truth from experience, for two reasons.

1st, Because it is a necessary truth, not a contingent one. It agrees with the experience of mankind since the beginning of the world, that the area of a triangle is equal to half the rectangle under its base and perpendicular. It agrees no less with experience that the sun rises in the east and sets in the west. So far as experience goes, these truths are upon an equal footing. But every man perceives this distinction between them, that the first is a necessary truth, and that it is impossible it should not be true; but the last is not necessary, but contingent, depending upon the will of him who made the world. As we cannot learn from experience that twice three must necessarily make six, so neither can we learn from experience that certain effects must proceed from a designing and intelligent cause. Experience informs us only of what has been, but never of what must be.

2dly, It may be observed, that experience can show a connection between a sign, and the thing signified by it, in those cases only, where both the sign and thing signified are perceived, and have always been perceived in conjunction. But if there be any case where the sign only is perceived, experience can never show its connection with the thing signified. Thus, for example, thought is a sign of a thinking principle or mind. But how do we know that thought cannot be without a mind? If any man should say that he knows this by experience, he deceives himself. It is impossible he can have any experience of this; because, though we have an immediate knowledge of the existence of thought in ourselves by consciousness, yet we have no immediate knowledge of a mind. The mind is not an

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immediate object either of sense or of consciousness. We may therefore justly conclude, that the necessary connection between thought and a mind, or thinking being, is not learned from experience.

The same reasoning may be applied to the connection between a work excellently fitted for some purpose, and design in the author or cause of that work. One of these, to wit, the work, may be an immediate object of perception. But the design and purpose of the author cannot be an immediate object of perception; and therefore experience can never inform us of any connection between the one and the other, far less of a necessary connection.

Thus I think it appears, that the principle we have been considering, to wit, that from certain signs or indications in the effect, we may infer, that there must have been intelligence, wisdom, or other intellectual or moral qualities in the cause, is a principle which we get, neither by reasoning nor by experience; and therefore, if it be a true principle, it must be a first principle. There is in the human understanding a light, by which we see immediately the evidence of it, when there is occasion to apply it.

Of how great importance this principle is in common life, we have already observed. And I need hardly mention its importance in natural theology.

The clear marks and signatures of wisdom, power, and goodness, in the constitution and government of the world, is, of all arguments that have been advanced for the being and providence of the Deity, that which in all ages has made the strongest impression upon candid and thinking minds; an argument, which has this peculiar advantage, that it gathers strength as human knowledge advances, and is more convincing at present than it was some centuries ago.

King Alphonsus might say, that he could contrive a better planetary system than that which astronomers

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held in his day. That system was not the work of God, but the fiction of men.

But since the true system of the sun, moon, and planets, has been discovered, no man, however atheistically disposed, has pretended to show how a better could be contrived.

When we attend to the marks of good contrivance which appear in the works of God, every discovery we make in the constitution of the material or intellectual system becomes a hymn of praise to the great Creator and Governor of the world. And a man who is possessed of the genuine spirit of philosophy, will think it impiety to contaminate the divine workmanship, by mixing it with those fictions of human fancy, called theories and hypotheses, which will always bear the signatures of human folly, no less than the other does of divine wisdom.

I know of no person who ever called in question the principle now under our consideration, when it is applied to the actions and discourses of men: for this would be to deny that we have any means of discerning a wise man from an idiot, or a man that is illiterate in the highest degree from a man of knowledge and learning, which no man has the effrontery to deny.

But, in all ages, those who have been unfriendly to the principles of religion, have made attempts to weaken the force of the argument for the existence and perfections of the Deity, which is founded on this principle. That argument has got the name of the argument from final causes; and as the meaning of this name is well understood, we shall use it.

The argument from final causes, when reduced to a syllogism, has these two premises: *First*, That design and intelligence in the cause, may with certainty be inferred from marks or signs of it in the effect. This is the principle we have been considering, and we may

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call it the *major* proposition of the argument. The *second*, which we call the *minor* proposition, is, that there are, in fact, the clearest marks of design and wisdom in the works of nature; and the conclusion is, that the works of nature are the effects of a wise and intelligent cause. One must either assent to the conclusion, or deny one or other of the premises.

Those among the ancients who denied a God or a providence, seem to me to have yielded the major proposition, and to have denied the minor; conceiving that there are not in the constitution of things such marks of wise contrivance as are sufficient to put the conclusion beyond doubt. This, I think, we may learn from the reasoning of Cotta the academic, in the third book of Cicero, of the nature of the gods.

The gradual advancement made in the knowledge of nature has put this opinion quite out of countenance.

When the structure of the human body was much less known than it is now, the famous Galen saw such evident marks of wise contrivance in it, that though he had been educated an Epicurean, he renounced that system, and wrote his book of the use of the parts of the human body, on purpose to convince others of what appeared so clear to himself, that it was impossible that such admirable contrivance should be the effect of chance.

Those, therefore, of later times, who are dissatisfied with this argument from final causes, have quitted the strong hold of the ancient Atheists, which had become untenable, and have chosen rather to make a defence against the major proposition.

Des Cartes seems to have led the way in this, though he was no Atheist. But, having invented some new arguments for the being of God, he was perhaps led to disparage those that had been used before, that he

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might bring more credit to his own. Or, perhaps, he was offended with the Peripatetics, because they often mixed final causes with physical, in order to account for the phenomena of nature.

He maintained therefore that physical causes only should be assigned for phenomena; that the philosopher has nothing to do with final causes; and that it is presumption in us to pretend to determine for what end any work of nature is framed. Some of those who were great admirers of Des Cartes, and followed him in many points, differed from him in this; particularly, Dr. Henry More, and the pious archbishop Fenelon: but others, after the example of Des Cartes, have shown a contempt of all reasoning from final causes. Among these, I think, we may reckon Maupertuis and Buffon. But the most direct attack has been made upon this principle by Mr. Hume, who puts an argument in the mouth of an Epicurean, on which he seems to lay great stress.

The argument is, That the universe is a singular effect, and therefore we can draw no conclusion from it, whether it may have been made by wisdom or not.

If I understand the force of this argument, it amounts to this, that if we had been accustomed to see worlds produced, some by wisdom and others without it, and had observed, that such a world as this which we inhabit was always the effect of wisdom, we might then, from past experience, conclude, that this world was made by wisdom; but having no such experience, we have no means of forming any conclusion about it.

That this is the strength of the argument, appears, because if the marks of wisdom seen in one world be no evidence of wisdom, the like marks seen in ten thousand will give as little evidence, unless, in time past, we perceived wisdom itself conjoined with the tokens of *it*; and, from their perceived conjunction in time past,

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conclude, that although, in the present world, we see only one of the two, the other must accompany it.

Whence it appears, that this reasoning of Mr. Hume is built on the supposition, that our inferring design from the strongest marks of it, is entirely owing to our past experience of having always found these two things conjoined. But I hope I have made it evident that this is not the case. And indeed it is evident, that, according to this reasoning, we can have no evidence of mind or design in any of our fellow men.

How do I know that any man of my acquaintance has understanding? I never saw his understanding. I see only certain effects, which my judgment leads me to conclude to be marks and tokens of it.

But, says the skeptical philosopher, you can conclude nothing from these tokens, unless past experience has informed you that such tokens are always joined with understanding. Alas! sir, it is impossible I can ever have this experience. The understanding of another man is no immediate object of sight, or of any other faculty which God has given me; and unless I can conclude its existence from tokens that are visible, I have no evidence that there is understanding in any man.

It seems then, that the man who maintains, that there is no force in the argument from final causes, must, if he will be consistent, see no evidence of the existence of any intelligent being but himself.

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CHAP. VII.

OPINIONS ANCIENT AND MODERN ABOUT FIRST PRINCIPLES.

I know no writer who has treated expressly of first principles before Aristotle; but it is probable, that, in the ancient Pythagorean school, from which both Plato and Aristotle borrowed much, this subject had not been left untouched.

Before the time of Aristotle, considerable progress had been made in the mathematical sciences, particularly in geometry.

The discovery of the forty-seventh proposition of the first book of Euclid, and of the five regular solids, is, by antiquity, ascribed to Pythagoras himself; and it is impossible he could have made those discoveries without knowing many other propositions in mathematics. Aristotle mentions the incommensurability of the diagonal of a square to its side, and gives a hint of the manner in which it was demonstrated. We find likewise some of the axioms of geometry mentioned by Aristotle as axioms, and as indemonstrable principles of mathematical reasoning.

It is probable, therefore, that, before the time of Aristotle, there were elementary treatises of geometry, which are now lost; and that in them the axioms were distinguished from the propositions which require proof.

To suppose, that so perfect a system as that of Euclid's Elements was produced by one man, without any preceding model or materials, would be to suppose Euclid more than a man. We ascribe to him as much as the weakness of human understanding will permit, if we suppose that the inventions in geometry, which had been made in a tract of preceding ages, were by him

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not only carried much further, but digested into so admirable a system, that his work obscured all that went before it, and made them be forgot and lost.

Perhaps, in like manner, the writings of Aristotle with regard to first principles, and with regard to many other abstract subjects, may have occasioned the loss of what had been written upon those subjects by more ancient philosophers.

Whatever may be in this, in his second book upon demonstration he has treated very fully of first principles; and though he has not attempted any enumeration of them, he shows very clearly, that all demonstration must be built upon truths which are evident of themselves, but cannot be demonstrated. His whole doctrine of syllogisms is grounded upon a few axioms, from which he endeavours to demonstrate the rules of syllogism in a mathematical way; and in his topics he points out many of the first principles of probable reasoning.

As long as the philosophy of Aristotle prevailed, it was held as a fixed point, that all proof must be drawn from principles already known and granted.

We must observe, however, that, in that philosophy, many things were assumed as first principles, which have no just claim to that character; such as, that the earth is at rest; that nature abhors a vacuum; that there is no change in the heavens above the sphere of the moon; that the heavenly bodies move in circles, that being the most perfect figure; that bodies do not gravitate in their proper place; and many others.

The Peripatetic philosophy, therefore, instead of being deficient in first principles, was redundant; instead of rejecting those that are truly such, it adopted, as first principles, many vulgar prejudices and rash judgments: and this seems, in general, to have been the spirit of ancient philosophy.

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It is true, there were, among the ancients, skeptical philosophers, who professed to have no principles, and held it to be the greatest virtue in a philosopher to withhold assent, and keep his judgment in a perfect equilibrium between contradictory opinions. But though this sect was defended by some persons of great erudition and acuteness, it died of itself, and the dogmatic philosophy of Aristotle, obtained a complete triumph over it.

What Mr. Hume says of those who are skeptical with regard to moral distinctions, seems to have had its accomplishment in the ancient sect of skeptics. "The only way," says he, "of converting antagonists of this kind, is to leave them to themselves; for finding that nobody keeps up the controversy with them, it is probable they will at last of themselves, from mere weariness, come over to the side of common sense and reason."

Setting aside this small sect of the skeptics, which was extinct many ages before the authority of Aristotle declined, I know of no opposition made to first principles among the ancients. The disposition was, as has been observed, not to oppose, but to multiply them beyond measure.

Men have always been prone, when they leave one extreme to run into the opposite; and this spirit in the ancient philosophy, to multiply first principles beyond reason, was a strong presage, that, when the authority of the Peripatetic system was at an end, the next reigning system would diminish their number beyond reason.

This accordingly happened in that great revolution of the philosophical republic brought about by Des Cartes. That truly great reformer in philosophy, cautious to avoid the snare in which Aristotle was taken, of admitting things as first principles too rashly, re-

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solved to doubt of every thing, and to withhold his assent, until it was forced by the clearest evidence.

Thus Des Cartes brought himself into that very state of suspense, which the ancient skeptics recommended as the highest perfection of a wise man, and the only road to tranquillity of mind. But he did not remain long in this state; his doubt did not arise from despair of finding the truth, but from caution, that he might not be imposed upon, and embrace a cloud instead of a goddess.

His very doubting convinced him of his own existence; for that which does not exist, can neither doubt, nor believe, nor reason.

Thus he emerged from universal skepticism by this short enthymeme, *cogito ergo sum.*

This enthymeme consists of an antecedent proposition, *I think*, and a conclusion drawn from it, *therefore I exist.*

If it should be asked, how Des Cartes came to be certain of the antecedent proposition, it is evident, that for this he trusted to the testimony of consciousness. He was conscious that he thought, and needed no other argument.

So that the first principle which he adopts in this famous enthymeme is this, that those doubts, and thoughts, and reasonings, of which he was conscious, did certainly exist, and that his consciousness put their existence beyond all doubt.

It might have been objected to this first principle of Des Cartes, how do you know that your consciousness cannot deceive you? You have supposed, that all you see, and hear, and handle, may be an illusion. Why, therefore, should the power of consciousness have this prerogative, to be believed implicitly, when all our other powers are supposed fallacious?

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To this objection, I know no other answer that can be made, but that we find it impossible to doubt of things of which we are conscious. The constitution of our nature forces this belief upon us irresistibly.

This is true, and is sufficient to justify Des Cartes, in assuming, as a first principle, the existence of thought, of which he was conscious.

He ought, however, to have gone further in this track, and to have considered whether there may not be other first principles, which ought to be adopted for the same reason. But he did not see this to be necessary, conceiving that, upon this one first principle, he could support the whole fabric of human knowledge.

To proceed to the conclusion of Des Cartes's enthymeme. From the existence of his thought he infers his own existence. Here he assumes another first principle, not a contingent, but a necessary one; to wit, that where there is thought, there must be a thinking being or mind.

Having thus established his own existence, he proceeds to prove the existence of a supreme and infinitely perfect Being; and from the perfection of the Deity, he infers that his senses, his memory, and the other faculties which God had given him, are not fallacious.

Whereas other men, from the beginning of the world, had taken for granted, as a first principle, the truth and reality of what they perceive by their senses, and from thence inferred the existence of a Supreme Author and Maker of the world. Des Cartes took a contrary course, conceiving that the testimony of our senses, and of all our faculties, excepting that of consciousness, ought not to be taken for granted, but to be proved by argument.

Perhaps some may think that Des Cartes meant only to admit no other first principle of contingent truths besides that of consciousness; but that he allowed the

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axioms of mathematics, and of other necessary truths, to be received without proof.

But I apprehend this was not his intention: for the truth of mathematical axioms must depend upon the truth of the faculty by which we judge of them. If the faculty be fallacious, we may be deceived by trusting to it. Therefore, as he supposes, that all our faculties, excepting consciousness, may be fallacious, and attempts to prove by argument that they are not, it follows, that according to his principles, even mathematical axioms require proof. Neither did he allow that there are any necessary truths; but maintained, that the truths which are commonly so called, depend upon the will of God. And we find his followers, who may be supposed to understand his principles, agree in maintaining, that the knowledge of our own existence is the first and fundamental principle from which all knowledge must be deduced by one who proceeds regularly in philosophy.

There is, no doubt, a beauty in raising a large fabric of knowledge upon a few first principles. The stately fabric of mathematical knowledge, raised upon the foundation of a few axioms and definitions, charms every beholder. Des Cartes, who was well acquainted with this beauty in the mathematical sciences, seems to have been ambitious to give the same beautiful simplicity to his system of philosophy; and therefore sought only one first principle as the foundation of all our knowledge, at least of contingent truths.

And so far has his authority prevailed, that those who came after him have almost universally followed him in this track. This, therefore, may be considered as the spirit of modern philosophy, to allow of no first principles of contingent truths but this one, that the thoughts and operations of our own minds, of which we are conscious, are self-evidently real and true; but that every thing else that is contingent is to be proved by argument.

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The existence of a material world, and of what we perceive by our senses, is not self-evident, according to this philosophy. Des Cartes founded it upon this argument, that God, who has given us our senses, and all our faculties, is no deceiver, and therefore they are not fallacious.

I endeavoured to show, that if it be not admitted as a first principle, that our faculties are not fallacious, nothing else can be admitted; and that it is impossible to prove this by argument, unless God should give us new faculties to sit in judgment upon the old.

Father Malebranche agreed with Des Cartes, that the existence of a material world requires proof; but being dissatisfied with Des Cartes's argument from the perfection of the Deity, thought that the only solid proof is from divine revelation.

Arnauld, who was engaged in controversy with Malebranche, approves of his antagonist in offering an argument to prove the existence of the material world, but objects to the solidity of his argument, and offers other arguments of his own.

Mr. Norris, a great admirer of Des Cartes and of Malebranche, seems to have thought all the arguments offered by them and by Arnauld to be weak; and confesses, that we have at best only probable evidence of the existence of the material world.

Mr. Locke acknowledges, that the evidence we have of this point is neither intuitive nor demonstrative; yet he thinks it may be called knowledge, and distinguishes it by the name of sensitive knowledge; and, as the ground of this sensitive knowledge he offers some weak arguments, which would rather tempt one to doubt than to believe.

At last bishop Berkeley and Arthur Collier, without any knowledge of each other, as far as appears by their

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writings, undertook to prove, that there neither is nor can be a material world. The excellent style and elegant composition of the former have made his writings to be known and read, and this system to be attributed to him only, as if Collier had never existed.

Both, indeed, owe so much to Malebranche, that if we take out of his system the peculiarities of our seeing all things in God, and our learning the existence of an external world from divine revelation, what remains is just the system of bishop Berkeley. I make this observation by the way, in justice to a foreign author, to whom British authors seem not to have allowed all that is due.

Mr. Hume has adopted bishop Berkeley's arguments against the existence of matter, and thinks them unanswerable.

We may observe, that this great metaphysician, though in general he declares in favour of universal skepticism, and therefore may seem to have no first principles at all, yet, with Des Cartes, he always acknowledges the reality of those thoughts and operations of mind, of which we are conscious. So that he yields the antecedent of Des Cartes's enthymeme *cogito*, but denies the conclusion *ergo sum;* the mind, being, according to him, nothing but that train of impressions and ideas of which we are conscious.

Thus we see, that the modern philosophy, of which Des Cartes may justly be accounted the founder, being built upon the ruins of the Peripatetic, has a spirit quite opposite, and runs into a contrary extreme. The Peripatetic not only adopted, as first principles, those which mankind have always rested upon in their most important transactions, but, along with them, many vulgar prejudices; so that this system was founded upon a wide bottom, but in many parts unsound. The modern system has narrowed the foundation so much,

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that every superstructure raised upon it appears top heavy.

From the single principle of the existence of our own thoughts, very little, if any thing, can be deduced by just reasoning, especially if we suppose that all our other faculties may be fallacious.

Accordingly, we find that Mr. Hume was not the first that was led into skepticism by the want of first principles. For soon after Des Cartes, there arose a sect in France called *Egoists*, who maintained, that we have no evidence of the existence of any thing but ourselves.

Whether these Egoists, like Mr. Hume, believed themselves to be nothing but a train of ideas and impressions, or to have a more permanent existence, I have not learned, having never seen any of their writings; nor do I know whether any of this sect did write in support of their principles. One would think, they who did not believe that there was any person to read, could have little inducement to write, unless they were prompted by that inward monitor, which Persius makes to be the source of genius and the teacher of arts. There can be no doubt, however, of the existence of such a sect, as they are mentioned by many authors, and refuted by some, particularly by Buffier, in his Treatise of First Principles.

Those Egoists and Mr. Hume seem to me to have reasoned more consequentially from Des Cartes's principle than he did himself; and indeed I cannot help thinking, that all who have followed Des Cartes's method, of requiring proof by argument of every thing except the existence of their own thoughts, have escaped the abyss of skepticism by the help of weak reasoning and strong faith, more than by any other means. And they seem to me to act more consistently, who, having rejected the first principles on which belief must be

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grounded, have no belief, than they, who like the others, rejecting first principles, must yet have a system of belief, without any solid foundation on which it may stand.

The philosophers I have hitherto mentioned, after the time of Des Cartes, have all followed his method, in resting upon the truth of their own thoughts as a first principle, but requiring arguments for the proof of every other truth of a contingent nature; but none of them, excepting Mr. Locke, has expressly treated of first principles, or given any opinion of their utility or inutility. We only collect their opinion from their following Des Cartes in requiring proof, or pretending to offer proof of the existence of a material world, which surely ought to be received as a first principle, if any thing be, beyond what we are conscious of.

I proceed, therefore, to consider what Mr. Locke has said on the subject of first principles or maxims.

I have not the least doubt of this author's candour in what he somewhere says, that his essay was mostly spun out of his own thoughts. Yet it is certain, that, in many of the notions which we are wont to ascribe to him, others were before him, particularly, Des Cartes, Gassendi, and Hobbes. Nor is it at all to be thought strange, that ingenious men, when they are got into the same track, should hit upon the same things.

But, in the definition which he gives of knowledge in general, and in his notions concerning axioms or first principles, I know none that went before him, though he has been very generally followed in both.

His definition of knowledge, that it consists solely in the perception of the agreement or disagreement of our ideas, has been already considered. But supposing it to be just, still it would be true, that some agreements and disagreements of ideas must be immediately perceived; and such agreements or disagreements, when they are expressed by affirmative or negative proposi-

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tions, are first principles, because their truth is immediately discerned as soon as they are understood.

This I think is granted by Mr. Locke, book 4. chap. 2. "There is a part of our knowledge," says he, "which we may call intuitive. In this the mind is at no pains of proving or examining, but perceives the truth as the eye does light, only by being directed toward it. And this kind of knowledge is the clearest and most certain that human frailty is capable of. This part of knowledge is irresistible, and, like bright sunshine, forces itself immediately to be perceived, as soon as ever the mind turns its view that way."

He further observes, "That this intuitive knowledge is necessary to connect all the steps of a demonstration."

From this, I think, it necessarily follows, that, in every branch of knowledge, we must make use of truths that are intuitively known, in order to deduce from them such as require proof.

But I cannot reconcile this with what he says, sect. 8. of the same chapter. "The necessity of this intuitive knowledge in every step of scientifical or demonstrative reasoning gave occasion, I imagine, to that mistaken axiom, that all reasoning was *ex præcognitis et præconcessis*, which, how far it is mistaken, I shall have occasion to show more at large, when I come to consider propositions, and particularly those propositions which are called maxims, and to show, that it is by a mistake that they are supposed to be the foundation of all our knowledge and reasonings."

I have carefully considered the chapter on maxims, which Mr. Locke here refers to; and though one would expect, from the quotation last made, that it should run contrary to what I have before delivered concerning first principles, I find only two or three

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sentences in it, and those chiefly incidental, to which I do not assent; and I am always happy in agreeing with a philosopher whom I so highly respect.

He endeavours to show, that axioms, or intuitive truths, are not innate.

To this I agree. I maintain only, that when the understanding is ripe, and when we distinctly apprehend such truths, we immediately assent to them.

He observes, that self-evidence is not peculiar to those propositions, which pass under the name of axioms, and have the dignity of axioms ascribed to them.

I grant that there are innumerable self-evident propositions, which have neither dignity nor utility, and therefore deserve not the name of axioms, as that name is commonly understood to imply, not only self-evidence, but some degree of dignity or utility. That a man is a man, and that a man is not a horse, are self-evident propositions; but they are, as Mr. Locke very justly calls them, trifling propositions. Tillotson very wittily says of such propositions, that they are so surfeited with truth, that they are good for nothing; and as they deserve not the name of axioms, so neither do they deserve the name of knowledge.

He observes, that such trifling self-evident propositions as we have named are not derived from axioms, and therefore that all our knowledge is not derived from axioms.

I grant that they are not derived from axioms, because they are themselves self-evident. But it is an abuse of words to call them knowledge, as it is to call them axioms; for no man can be said to be the wiser or more knowing for having millions of them in store.

He observes, that the particular propositions contained under a general axiom are no less self-evident than the general axiom, and that they are sooner

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known and understood. Thus, it is as evident, that my hand is less than my body, as that a part is less than the whole; and I know the truth of the particular proposition sooner, than that of the general.

This is true. A man cannot perceive the truth of a general axiom, such as, that a part is less than the whole, until he has the general notions of a part and a whole formed in his mind; and before he has these general notions, he may perceive that his hand is less than his body.

A great part of this chapter on maxims is levelled against a notion, which, it seems, some have entertained, that all our knowledge is derived from these two maxims; to wit, whatever is, is; and it is impossible for the same thing to be and not to be.

This I take to be a ridiculous notion, justly deserving the treatment which Mr. Locke has given it, if it at all merited his notice. These are identical propositions; they are trifling and surfeited with truth. No knowledge can be derived from them.

Having mentioned how far I agree with Mr. Locke concerning maxims or first principles, I shall next take notice of two or three things wherein I cannot agree with him.

In the seventh section of this chapter, he says, That concerning the real existence of all other beings, besides ourselves, and a first cause, there are no maxims.

I have endeavoured to show, that there are maxims, or first principles, with regard to other existences. Mr. Locke acknowledges, that we have a knowledge of such existences, which, he says, is neither intuitive nor demonstrative, and which, therefore, he calls sensitive knowledge. It is demonstrable, and was long ago demonstrated by Aristotle, that every proposition to which we give a rational assent, must either have its evidence in itself, or derive it from some antecedent

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proposition. And the same thing may be said of the antecedent proposition. As, therefore, we cannot go back to antecedent propositions without end, the evidence must at last rest upon propositions, one or more, which have their evidence in themselves, that is, upon first principles.

As to the evidence of our own existence, and of the existence of a first cause, Mr. Locke does not say whether it rests upon first principles or not. But it is manifest, from what he has said upon both, that it does.

With regard to our own existence, says he, we perceive it so plainly, and so certainly, that it neither needs, nor is capable of any proof. This is as much as to say, that our own existence is a first principle; for it is applying to this truth the very definition of a first principle.

He adds, that if I doubt, that very doubt makes me perceive my own existence, and will not suffer me to doubt of that. If I feel pain, I have as certain perception of my existence as of the pain I feel.

Here we have two first principles plainly implied; 1st, That my feeling pain, or being conscious of pain, is a certain evidence of the real existence of that pain. And, 2dly, that pain cannot exist without a mind, or being that is pained. That these are first principles, and incapable of proof, Mr. Locke acknowledges. And it is certain, that if they are not true, we can have no evidence of our own existence. For if we may feel pain when no pain really exists, or if pain may exist without any being that is pained, then it is certain that our feeling pain can give us no evidence of our existence.

Thus it appears, that the evidence of our own existence, according to the view that Mr. Locke gives of it, is grounded upon two of those first principles which we had occasion to mention.

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If we consider the argument he has given for the existence of a first intelligent cause, it is no less evident that it is grounded upon other two of them. The first, that what begins to exist must have a cause of its existence; and the second, that an unintelligent and unthinking being, cannot be the cause of beings that are thinking and intelligent. Upon these two principles, he argues very convincingly for the existence of a first intelligent cause of things. And if these principles are not true, we can have no proof of the existence of a first cause, either from our own existence, or from the existence of other things that fall within our view.

Another thing advanced by Mr. Locke upon this subject is, that no science is, or has been built upon maxims.

Surely Mr. Locke was not ignorant of geometry, which has been built upon maxims prefixed to the elements, as far back as we are able to trace it. But though they had not been prefixed, which was a matter of utility rather than necessity, yet it must be granted, that every demonstration in geometry is grounded, either upon propositions formerly demonstrated, or upon self-evident principles.

Mr. Locke further says, that maxims are not of use to help men forward in the advancement of the sciences, or new discoveries of yet unknown truths: that Newton, in the discoveries he has made in his never enough to be admired book, has not been assisted by the general maxims, whatever is, is; or the whole is greater than a part, or the like.

I answer, the first of these is, as was before observed, an identical trifling proposition, of no use in mathematics, or in any other science. The second is often used by Newton, and by all mathematicians, and many demonstrations rest upon it. In general Newton, as

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well as all other mathematicians, grounds his demonstrations of mathematical propositions upon the axioms laid down by Euclid, or upon propositions which have been before demonstrated by help of those axioms.

But it deserves to be particularly observed, that Newton, intending in the third book of his *Principia*, to give a more scientific form to the physical part of astronomy, which he had at first composed in a popular form, thought proper to follow the example of Euclid, and to lay down first, in what he calls, *Regulæ Philosophandi*, and in his *Phenomena*, the first principles which he assumes in his reasoning.

Nothing, therefore, could have been more unluckily adduced by Mr. Locke to support his aversion to first principles, than the example of sir Isaac Newton, who, by laying down the first principles upon which he reasons in those parts of natural philosophy which he cultivated, has given a stability to that science which it never had before, and which it will retain to the end of the world.

I am now to give some account of a philosopher, who wrote expressly on the subject of first principles, after Mr. Locke.

Pere Buffier, a French jesuit, first published his *Traité des premiers Veritez, et de la source de nos jugements*, in 8vo. if I mistake not, in the year 1724. It was afterward published in folio, as a part of his *Cours des sciences*. Paris, 1732.

He defines first principles to be propositions so clear, that they can neither be proved, nor combated by those that are more clear.

The first source of first principles he mentions, is that intimate conviction which every man has of his own existence, and of what passes in his own mind. Some philosophers, he observes, admitted these as first principles, who were unwilling to admit any others;

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and he shows the strange consequences that follow from this system.

A second source of first principles he makes to be common sense; which, he observes, philosophers have not been wont to consider. He defines it to be the disposition which nature has planted in all men, or the far greater part, which leads them, when they come to the use of reason, to form a common and uniform judgment upon objects which are not objects of consciousness, nor are founded on any antecedent judgment.

He mentions not as a full enumeration, but as a specimen, the following principles of common sense.

1st, That there are other beings, and other men in the universe, besides myself.

2dly, That there is in them something that is called truth, wisdom, prudence; and that these things are not purely arbitrary.

3dly, That there is something in me which I call intelligence, and something which is not that intelligence, which I call my body, and that these things have different properties.

4thly, That all men are not in a conspiracy to deceive me and impose upon my credulity.

5thly, That what has not intelligence cannot produce the effects of intelligence, nor can pieces of matter thrown together by chance form any regular work, such as a clock or watch.

He explains very particularly the several parts of his definition of common sense, and shows how the dictates of common sense may be distinguished from common prejudices; and then enters into a particular consideration of the primary truths that concern being in general; the truths that concern thinking beings; those that concern body; and those on which the various branches of human knowledge are grounded.

I shall not enter into a detail of his sentiments on these subjects. I think there is more which I take to

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be original in this treatise, than in most books of the metaphysical kind I have met with; that many of his notions are solid; and that others, which I cannot altogether approve, are ingenious.

The other writers I have mentioned, after Des Cartes, may, I think, without impropriety, be called Cartesians: for though they differ from Des Cartes in some things, and contradict him in others, yet they set out from the same principles, and follow the same method, admitting no other first principle with regard to the existence of things but their own existence, and the existence of those operations of mind of which they are conscious; and requiring that the existence of a material world, and the existence of other men and things, should be proved by argument.

This method of philosophizing is common to Des Cartes, Malebranche, Arnauld, Locke, Norris, Collier, Berkeley, and Hume; and, as it was introduced by Des Cartes, I call it the Cartesian system, and those who follow it, Cartesians, not intending any disrespect by this term, but to signify a particular method of philosophizing common to them all, and begun by Des Cartes.

Some of these have gone the utmost length in skepticism, leaving no existence in nature but that of ideas and impressions. Some have endeavoured to throw off the belief of a material world only, and to leave us ideas and spirits. All of them have fallen into very gross paradoxes, which can never sit easy upon the human understanding, and which, though adopted in the closet, men find themselves under a necessity of throwing off and disclaiming when they enter into society.

Indeed, in my judgment, those who have reasoned most acutely and consequentially upon this system, are they that have gone deepest into skepticism.

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Father Buffier, however, is no Cartesian in this sense. He seems to have perceived the defects of the Cartesian system while it was in the meridian of its glory, and to have been aware that a ridiculous skepticism is the natural issue of it, and therefore nobly attempted to lay a broader foundation for human knowledge, and has the honour of being the first, as far as I know, after Aristotle, who has given the world a just treatise upon first principles.

Some late writers, particularly Dr. Oswald, Dr. Beattie, and Dr. Campbell, have been led into a way of thinking somewhat similar to that of Buffier; the two former, as I have reason to believe, without any intercourse with one another, or any knowledge of what Buffier had wrote on the subject. Indeed, a man, who thinks, and who is acquainted with the philosophy of Mr. Hume, will very naturally be led to apprehend, that, to support the fabric of human knowledge, some other principles are necessary than those of Des Cartes and Mr. Locke. Buffier must be acknowledged to have the merit of having discovered this, before the consequences of the Cartesian system were so fully displayed as they have been by Mr. Hume. But I am apt to think, that the man who does not see this now, must have but a superficial knowledge of these subjects.

The three writers above mentioned have my high esteem and affection as men; but I intend to say nothing of them as writers upon this subject, that I may not incur the censure of partiality. Two of them have been joined so closely with me in the animadversions of a celebrated writer, that we may be thought too near of kin to give our testimony of one another.

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CHAP. VIII.

OF PREJUDICES, THE CAUSES OF ERROR.

Our intellectual powers are wisely fitted by the Author of our nature for the discovery of truth, as far as suits our present state. Error is not their natural issue, any more than disease is of the natural structure of the body. Yet, as we are liable to various diseases of body from accidental causes, external and internal; so we are, from like causes, liable to wrong judgments.

Medical writers have endeavoured to enumerate the diseases of the body, and to reduce them to a system, under the name of *nosology;* and it were to be wished that we had also a nosology of the human understanding.

When we know a disorder of the body, we are often at a loss to find the proper remedy; but in most cases the disorders of the understanding point out their remedies so plainly, that he who knows the one must know the other.

Many authors have furnished useful materials for this purpose, and some have endeavoured to reduce them to a system. I like best the general division given of them by lord Bacon, in his fifth book *De augmentis scientiarum,* and more fully treated in his *Novum Organum.* He divides them into four classes, *idola tribus, idola specus, idola fori,* and *idola the atri.* The names are perhaps fanciful; but I think the division judicious, like most of the productions of that wonderful genius. And as this division was first made by him, he may be indulged the privilege of giving names to its several members.

I propose in this chapter to explain the several members of this division, according to the meaning

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of the author, and to give instances of each, without confining myself to those which lord Bacon has given, and without pretending to a complete enumeration.

To every bias of the understanding, by which a man may be misled in judging, or drawn into error, lord Bacon gives the name of an idol. The understanding, in its natural and best state, pays its homage to truth only. The causes of error are considered by him as so many false deities, who receive the homage which is due only to truth.

The first class are the *idola tribus*. These are such as beset the whole human species; so that every man is in danger from them. They arise from principles of the human constitution, which are highly useful and necessary in our present state; but, by their excess or defect, or wrong direction, may lead us into error.

As the active principles of the human frame are wisely contrived by the Author of our being, for the direction of our actions, and yet, without proper regulation and restraint, are apt to lead us wrong; so it is also with regard to those parts of our constitution that have influence upon our opinions. Of this we may take the following instances.

1st, *First*, Men are prone to be led too much by authority in their opinions.

In the first part of life we have no other guide; and without a disposition to receive implicitly what we are taught, we should be incapable of instruction, and incapable of improvement.

When judgment is ripe, there are many things in which we are incompetent judges. In such matters, it is most reasonable to rely upon the judgment of those whom we believe to be competent and disinterested. The highest court of judicature in the nation relies upon the authority of lawyers and physicians in matters belonging to their respective professions.

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Even in matters which we have access to know, authority always will have, and ought to have, more or less weight, in proportion to the evidence on which our own judgment rests, and the opinion we have of the judgment and candour of those who differ from us, or agree with us. The modest man, conscious of his own fallability in judging, is in danger of giving too much to authority; the arrogant of giving too little.

In all matters belonging to our cognizance, every man must be determined by his own final judgment, otherwise he does not act the part of a rational being. Authority may add weight to one scale; but the man holds the balance, and judges what weight he ought to allow to authority.

If a man should even claim infallibility, we must judge of his title to that prerogative. If a man pretend to be an ambassador from heaven, we must judge of his credentials. No claim can deprive us of this right, or excuse us for neglecting to exercise it.

As therefore our regard to authority may be either too great or too small, the bias of human nature seems to lean to the first of these extremes; and, I believe, it is good for men in general that it should do so.

When this bias concurs with an indifference about truth, its operation will be the more powerful.

The love of truth is natural to man, and strong in every well disposed mind. But it may be overborne by party zeal, by vanity, by the desire of victory, or even by laziness. When it is superior to these, it is a manly virtue, and requires the exercise of industry, fortitude, self-denial, candour, and openness to conviction.

As there are persons in the world of so mean and abject a spirit, that they rather choose to owe their subsistence to the charity of others, than by industry to acquire some property of their own; so there are

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many more who may be called mere beggars with regard to their opinions. Through laziness and indifference about truth, they leave to others the drudgery of digging for this commodity; they can have enough at second hand to serve their occasions. Their concern is not to know what is true, but what is said and thought on such subjects; and their understanding, like their clothes, is cut according to the fashion.

This distemper of the understanding has taken so deep root in a great part of mankind, that it can hardly be said that they use their own judgment in things that do not concern their temporal interest; nor is it peculiar to the ignorant; it infects all ranks. We may guess their opinions when we know where they were born, of what parents, how educated, and what company they have kept. These circumstances determine their opinions in religion, in politics, and in philosophy.

2dly, A *second* general prejudice arises from a disposition to measure things less known, and less familiar, by those that are better known and more familiar.

This is the foundation of analogical reasoning, to which we have a great proneness by nature, and to it, indeed, we owe a great part of our knowledge. It would be absurd to lay aside this kind of reasoning altogether, and it is difficult to judge how far we may venture upon it. The bias of human nature is to judge from too slight analogies.

The objects of sense engross our thoughts in the first part of life, and are most familiar through the whole of it. Hence in all ages men have been prone to attribute the human figure and human passions and frailties to superior intelligences, and even to the Supreme Being.

There is a disposition in men to materialize every thing, if I may be allowed the expression; that is, to

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apply the notions we have of material objects to things of another nature. Thought is considered as analogous to motion in a body; and as bodies are put in motion by impulses, and by impressions made upon them by contiguous objects, we are apt to conclude that the mind is made to think by impressions made upon it, and that there must be some kind of contiguity between it and the objects of thought. Hence the theories of ideas and impressions have so generally prevailed.

Because the most perfect works of human artists are made after a model, and of materials that before existed, the ancient philosophers universally believed that the world was made of a pre-existent, uncreated matter; and many of them, that there were eternal and uncreated models of every species of things which God made.

The mistakes in common life, which are owing to this prejudice, are innumerable, and cannot escape the slightest observation. Men judge of other men by themselves, or by the small circle of their acquaintance. The selfish man thinks all pretences to benevolence and public spirit to be mere hypocrisy or self-deceit. The generous and open hearted believe fair pretences too easily, and are apt to think men better than they really are. The abandoned and profligate can hardly be persuaded that there is any such thing as real virtue in the world. The rustic forms his notions of the manners and characters of men from those of his country village, and is easily duped when he comes into a great city.

It is commonly taken for granted, that this narrow way of judging of men is to be cured only by an extensive intercourse with men of different ranks, professions, and nations; and that the man whose acquaintance has been confined within a narrow circle, must

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have many prejudices and narrow notions, which a more extensive intercourse would have cured.

3dly, Men are often led into error by the love of simplicity, which disposes us to reduce things to few principles, and to conceive a greater simplicity in nature than there really is.

To love simplicity, and to be pleased with it wherever we find it, is no imperfection, but the contrary. It is the result of good taste. We cannot but be pleased to observe, that all the changes of motion produced by the collision of bodies, hard, soft, or elastic, are reducible to three simple laws of motion, which the industry of philosophers has discovered.

When we consider what a prodigious variety of effects depend upon the law of gravitation; how many phenomena in the earth, sea, and air, which, in all preceding ages, had tortured the wits of philosophers, and occasioned a thousand vain theories, are shown to be the necessary consequences of this one law; how the whole system of sun, moon, planets, primary and secondary, and comets, are kept in order by it, and their seeming irregularities accounted for and reduced to accurate measure; the simplicity of the cause, and the beauty and variety of the effects, must give pleasure to every contemplative mind. By this noble discovery, we are taken, as it were, behind the scene in this great drama of nature, and made to behold some part of the art of the divine Author of this system, which, before this discovery, eye had not seen, nor ear heard, nor had it entered into the heart of man to conceive.

There is, without doubt, in every work of nature, all the beautiful simplicity that is consistent with the end for which it was made. But if we hope to discover how nature brings about its ends, merely from this principle, that it operates in the simplest and best way, we deceive ourselves, and forget that the wisdom of

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Nature is more above the wisdom of man, than man's wisdom is above that of a child.

If a child should sit down to contrive how a city is to be fortified, or an army arranged in the day of battle, he would, no doubt, conjecture what, to his understanding, appeared the simplest and best way. But could he ever hit upon the true way? No surely. When he learns from fact how these effects are produced, he will then see how foolish his childish conjectures were.

We may learn something of the way in which nature operates, from fact and observation; but if we conclude that it operates in such a manner, only because to our understanding, that appears to be the best and simplest manner, we shall always go wrong.

It was believed, for many ages, that all the variety of concrete bodies we find on this globe is reducible to four elements, of which they are compounded, and into which they may be resolved. It was the simplicity of this theory, and not any evidence from fact, that made it to be so generally received; for the more it is examined, we find the less ground to believe it.

The Pythagoreans and Platonists were carried further by the same love of simplicity. Pythagoras, by his skill in mathematics, discovered, that there can be no more than five regular solid figures, terminated by plain surfaces which are all similar and equal; to wit, the tetrahedron, the cube, the octahedron, the dodecahedron, and the icosihedron. As nature works in the most simple and regular way, he thought that all the elementary bodies must have one or other of those regular figures; and that the discovery of the properties and relations of the regular solids would be a key to open the mysteries of nature.

This notion of the Pythagoreans and Platonists has undoubtedly great beauty and simplicity. Accordingly

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it prevailed, at least, to the time of Euclid. He was a Platonic philosopher, and is said to have wrote all the books of his Elements, in order to discover the properties and relations of the five regular solids. This ancient tradition of the intention of Euclid in writing his Elements, is countenanced by the work itself. For the last books of the Elements treat of the regular solids, and all the preceding are subservient to the last.

So that this most ancient mathematical work, which, for its admirable composition, has served as a model to all succeeding writers in mathematics, seems, like the two first books of Newton's Principia, to have been intended by its author to exhibit the mathematical principles of natural philosophy.

It was long believed, that all the qualities of bodies, and all their medical virtues, were reducible to four, moisture and dryness, heat and cold: and that there are only four temperaments of the human body; the sanguine, the melancholy, the bilious, and the phlegmatic. The chymical system, of reducing all bodies to salt, sulphur, and mercury, was of the same kind. For how many ages did men believe, that the division of all the objects of thought into ten categories, and of all that can be affirmed or denied of any thing, into five universals or predicables, were perfect enumerations?

The evidence from reason that could be produced for those systems was next to nothing, and bore no proportion to the ground they gained in the belief of men; but they were simple and regular, and reduced things to a few principles; and this supplied their want of evidence.

Of all the systems we know, that of Des Cartes was most remarkable for its simplicity. Upon one proposition, *I think*, he builds the whole fabric of human knowledge. And from mere matter, with a certain

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quantity of motion given it at first, he accounts for all the phenomena of the material world.

The physical part of this system was mere hypothesis. It had nothing to recommend it but its simplicity; yet it had force enough to overturn the system of Aristotle, after that system had prevailed for more than a thousand years.

The principle of gravitation, and other attracting and repelling forces, after sir Isaac Newton had given the strongest evidence of their real existence in nature, were rejected by the greatest part of Europe for half a century, because they could not be accounted for by matter and motion. So much were men enamoured with the simplicity of the Cartesian system.

Nay, I apprehend, it was this love of simplicity, more than real evidence, that led Newton himself to say, in the preface to his Principia, speaking of the phenomena of the material world. "Nam multa me movent ut nonnihil suspicer, ea omnia ex viribus quibusdam pendere posse, quibus corporum particulæ, per causas nondum cognitas, vel in se mutuo impelluntur, et secundum figuras regulares cohærent, vel ab invicem fugantur et recedunt." For certainly we have no evidence from fact, that all the phenomena of the material world are produced by attracting or repelling forces.

With his usual modesty, he proposes it only as a slight suspicion; and the ground of this suspicion could only be, that he saw that many of the phenomena of nature depended upon causes of this kind; and therefore was disposed, from the simplicity of nature, to think that all do.

When a real cause is discovered, the same love of simplicity leads men to attribute effects to it which are beyond its province.

A medicine that is found to be of great use in one distemper, commonly has its virtues multiplied, till it

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becomes a *panacea*. Those who have lived long, can recollect many instances of this. In other branches of knowledge, the same thing often happens. When the attention of men is turned to any particular cause, by discovering it to have remarkable effects, they are in great danger of extending its influence, upon slight evidence, to things with which it has no connection. Such prejudices arise from the natural desire of simplyfying natural causes, and of accounting for many phenomena from the same principle.

4thly, One of the most copious sources of error in philosophy, is the misapplication of our noblest intellectual power to purposes for which it is incompetent.

Of all the intellectual powers of man, that of invention bears the highest price. It resembles most the power of creation, and is honoured with that name.

We admire the man who shows a superiority in the talent of finding the means of accomplishing an end; who can, by a happy combination, produce an effect, or make a discovery beyond the reach of other men; who can draw important conclusions from circumstances that commonly pass unobserved; who judges with the greatest sagacity of the designs of other men, and the consequences of his own actions. To this superiority of understanding we give the name of genius, and look up with admiration to every thing that bears the marks of it.

Yet this power so highly valuable in itself, and so useful in the conduct of life, may be misapplied; and men of genius, in all ages, have been prone to apply it to purposes for which it is altogether incompetent.

The works of men and the works of nature are not of the same order. The force of genius may enable a man perfectly to comprehend the former, and to see them to the bottom. What is contrived and executed by one man may be perfectly understood by another

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man. With great probability, he may from a part, conjecture the whole, or from the effects may conjecture the causes; because they are effects of a wisdom not superior to his own.

But the works of nature are contrived and executed by a wisdom and power infinitely superior to that of man; and when men attempt, by the force of genius, to discover the causes of the phenomena of nature, they have only the chance of going wrong more ingeniously. Their conjectures may appear very probable to beings no wiser than themselves, but they have no chance to hit the truth. They are like the conjectures of a child how a ship of war is built, and how it is managed at sea.

Let the man of genius try to make an animal, even the meanest; to make a plant, or even a single leaf of a plant, or feather of a bird; he will find that all his wisdom and sagacity can bear no comparison with the wisdom of nature, nor his power with the power of nature.

The experience of all ages shows how prone ingenious men have been to invent hypotheses to explain the phenomena of nature; how fond, by a kind of anticipation, to discover her secrets. Instead of a slow and gradual ascent in the scale of natural causes, by a just and copious induction, they would shorten the work, and, by a flight of genius get to the top at once. This gratifies the pride of human understanding; but it is an attempt beyond our force, like that of Phaeton to guide the chariot of the sun.

When a man has laid out all his ingenuity in fabricating a system, he views it with the eye of a parent; he strains phenomena to make them tally with it, and make it look like the work of nature.

The slow and patient method of induction, the only way to attain any knowledge of nature's work, was little understood until it was delineated by lord Bacon,

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and has been little followed since. It humbles the pride of man, and puts him constantly in mind that his most ingenious conjectures with regard to the works of God are pitiful and childish.

There is no room here for the favourite talent of invention. In the humble method of information, from the great volume of nature we must receive all our knowledge of nature. Whatever is beyond a just interpretation of that volume, is the work of man; and the work of God ought not to be contaminated by any mixture with it.

To a man of genius, self-denial is a difficult lesson in philosophy as well as in religion. To bring his fine imaginations and most ingenious conjectures to the fiery trial of experiment and induction, by which the greater part, if not the whole, will be found to be dross, is a humiliating task. This is to condemn him to dig in a mine, when he would fly with the wings of an eagle.

In all the fine arts, whose end is to please, genius is deservedly supreme. In the conduct of human affairs it often does wonders; but in all inquiries into the constitution of nature it must act a subordinate part, ill suited to the superiority it boasts. It may combine, but it must not fabricate: it may collect evidence, but must not supply the want of it by conjecture: it may display its powers by putting nature to the question in well contrived experiments, but it must add nothing to her answers.

5thly, In avoiding one extreme, men are very apt to rush into the opposite.

Thus, in the rude ages, men, unaccustomed to search for natural causes, ascribe every uncommon appearance to the immediate interposition of invisible beings; but when philosophy has discovered natural causes of many events, which in the days of ignorance, were

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ascribed to the immediate operation of gods or demons, they are apt to think, that all the phenomena of nature may be accounted for in the same way, and that there is no need of an invisible Maker and Governor of the world.

Rude men are at first disposed to ascribe intelligence and active power to every thing they see move or undergo any change. "Savages," says the Abbe Raynal, "wherever they see motion which they cannot account for, there they suppose a soul." When they come to be convinced of the folly of this extreme, they are apt to run into the opposite, and to think that every thing moves only as it is moved, and acts as it is acted upon.

Thus, from the extreme of superstition, the transition is easy to that of atheism; and from the extreme of ascribing activity to every part of nature, to that of excluding it altogether, and making even the determinations of intelligent beings, the links of one fatal chain, or the wheels of one great machine.

The abuse of occult qualities in the Peripatetic philosophy, led Des Cartes and his followers to reject all occult qualities; to pretend to explain all the phenomena of nature by mere matter and motion, and even to fix disgrace upon the name of occult quality.

6thly, Men's judgments are often perverted by their affections and passions. This is so commonly observed, and so universally acknowledged, that it needs no proof nor illustration.

The second class of idols in lord Bacon's division, are the *idola specus*.

These are prejudices which have their origin, not from the constitution of human nature, but from something peculiar to the individual.

As in a cave objects vary in their appearance according to the form of the cave and the manner in which

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it receives the light, lord Bacon conceives the mind of every man to resemble a cave, which has its particular form and its particular manner of being enlightened; and, from these circumstances, often gives false colours and a delusive appearance to objects seen in it.

For this reason, he gives the name of *idola specus* to those prejudices which arise from the particular way in which a man has been trained, from his being addicted to some particular profession, or from something particular in the turn of his mind.

A man whose thoughts have been confined to a certain track by his profession or manner of life, is very apt to judge wrong when he ventures out of that track. He is apt to draw every thing within the sphere of his profession, and to judge by its maxims of things that have no relation to it.

The mere mathematician is apt to apply measure and calculation to things which do not admit of it. Direct and inverse ratios have been applied by an ingenious author to measure human affections, and the moral worth of actions. An eminent mathematician attempted to ascertain by calculation, the ratio in which the evidence of facts must decrease in the course of time, and fixed the period when the evidence of the facts on which Christianity is founded shall become evanescent, and when, in consequence, no faith shall be found on the earth. I have seen a philosophical dissertation published by a very good mathematician, wherein, in opposition to the ancient division of things into ten categories, he maintains that there are no more, and can be no more than two categories, to wit *data* and *quæsita*.

The ancient chymists were wont to explain all the mysteries of nature, and even of religion, by salt, sulphur, and mercury.

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Mr. Locke, I think, mentions an eminent musician who believed that God created the world in six days and rested the seventh, because there are but seven notes in music. I knew one of that profession, who thought that there could be only three parts in harmony, to wit, bass, tenor, and treble, because there are but three persons in the trinity.

The learned and ingenious Dr. Henry More having very elaborately and methodically compiled his Enchiridium Metaphysicum, and Enchiridium Ethicum, found all the divisions and subdivisions of both to be allegorically taught in the first chapter of Genesis. Thus even very ingenious men are apt to make a ridiculous figure, by drawing into the track, in which their thoughts have long run, things altogether foreign to it.

Different persons, either from temper or from education, have different tendencies of understanding, which, by their excess, are unfavourable to sound judgment.

Some have an undue admiration of antiquity, and contempt of whatever is modern; others go as far into the contrary extreme. It may be judged, that the former are persons who value themselves upon their acquaintance with ancient authors, and the latter such as have little knowledge of this kind.

Some are afraid to venture a step out of the beaten track, and think it safest to go with the multitude; others are fond of singularities, and of every thing that has the air of paradox.

Some are desultory and changeable in their opinions; others unduly tenacious. Most men have a predilection for the tenets of their sect or party, and still more for their own inventions.

The *idola fori* are the fallacies arising from the imperfections and the abuse of language, which is an instrument of thought, as well as of the communication of our thoughts.

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Whether it be the effect of constitution or of habit, I will not take upon me to determine; but, from one or both of these causes, it happens, that no man can pursue a train of thought or reasoning without the use of language. Words are the signs of our thoughts; and the sign is so associated with the thing signified, that the last can hardly present itself to the imagination, without drawing the other along with it.

A man who would compose in any language, must think in that language. If he thinks in one language what he would express in another, he thereby doubles his labour, and, after all, his expressions will have more the air of a translation than of an original.

This shows, that our thoughts take their colour in some degree from the language we use; and that, although language ought always to be subservient to thought, yet thought must be at some times, and in some degree, subservient to language.

As a servant that is extremely useful and necessary to his master, by degrees acquires an authority over him, so that the master must often yield to the servant; such is the case with regard to language. Its intention is to be a servant to the understanding; but it is so useful and so necessary, that we cannot avoid being sometimes led by it when it ought to follow. We cannot shake off this impediment, we must drag it along with us; and therefore must direct our course, and regulate our pace, as it permits.

Language must have many imperfections when applied to philosophy, because it was not made for that use, in the early periods of society, rude and ignorant men use certain forms of speech, to express their wants, their desires, and their transactions with one another. Their language can reach no further than their speculations and notions; and if their notions be vague and ill defined, the words by which they express them must be so likewise.

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It was a grand and noble project of bishop Wilkins, to invent a philosophical language, which should be free from the imperfections of vulgar languages. Whether this attempt will ever succeed, so far as to be generally useful, I shall not pretend to determine. The great pains taken by that excellent man in this design have hitherto produced no effect. Very few have ever entered minutely into his views; far less have his philosophical language and his real character been brought into use.

He founds his philosophical language and real character upon a systematical division and subdivision of all the things which may be expressed by language, and, instead of the ancient division into ten categories, has made forty categories, or *summa genera*. But whether this division, though made by a very comprehensive mind, will always suit the various systems that may be introduced, and all the real improvements that may be made in human knowledge, may be doubted. The difficulty is still greater in the subdivisions; so that it is to be feared, that this noble attempt of a great genius will prove abortive, until philosophers have the same opinions and the same systems in the various branches of human knowledge.

There is more reason to hope, that the language used by philosophers may be gradually improved in copiousness and in distinctness; and that improvements in knowledge and in language may go hand in hand, and facilitate each other. But I fear the imperfections of language can never be perfectly remedied while our knowledge is imperfect.

However this may be, it is evident that the imperfections of language, and much more the abuse of it, are the occasion of many errors; and that in many disputes which have engaged learned men, the difference has been partly, and in some wholly, about the meaning of words.

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Mr. Locke found it necessary to employ a fourth part of his Essay on Human Understanding about words; their various kinds; their imperfection and abuse, and the remedies of both; and has made many observations upon these subjects, well worthy of attentive perusal.

The fourth class of prejudices are the *idola theatri*, by which are meant prejudices arising from the systems or sects, in which we have been trained, or which we have adopted.

A false system once fixed in the mind, becomes, as it were, the medium through which we see objects: they receive a tincture from it, and appear of another colour than when seen by a pure light.

Upon the same subject, a Platonist, a Peripatetic, and an Epicurean, will think differently, not only in matters connected with his peculiar tenets, but even in things remote from them.

A judicious history of the different sects of philosophers, and the different methods of philosophizing, which have obtained among mankind, would be of no small use to direct men in the search of truth. In such a history, what would be of the greatest moment is not so much a minute detail of the *dogmata* of each sect, as a just delineation of the spirit of the sect, and of that point of view in which things appeared to its founder. This was perfectly understood, and, as far as concerns the theories of morals, is executed with great judgment and candour by Dr. Smith in his theory of moral sentiments.

As there are certain temperaments of the body that dispose a man more to one class of diseases than to another; and, on the other hand, diseases of that kind when they happen by accident, are apt to induce the temperament that is suited to them; there is some-

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thing analogous to this in the diseases of the understanding.

A certain complexion of understanding may dispose a man to one system of opinions more than to another; and, on the other hand, a system of opinions, fixed in the mind by education or otherwise, gives that complexion to the understanding which is suited to them.

It were to be wished, that the different systems that have prevailed could be classed according to their spirit, as well as named from their founders. Lord Bacon has distinguished false philosophy into the sophistical, the empirical, and the superstitious, and has made judicious observations upon each of these kinds. But I apprehend this subject deserves to be treated more fully by such a hand, if such a hand can be found.

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ESSAY VII.

OF REASONING.

CHAP. I.

OF REASONING IN GENERAL, AND OF DEMONSTRATION.

The power of reasoning is very nearly allied to that of judging; and it is of little consequence in the common affairs of life to distinguish them nicely. On this account, the same name is often given to both. We include both under the name of reason. The assent we give to a proposition is called judgment, whether the proposition be self-evident, or derive its evidence by reasoning from other propositions.

Yet there is a distinction between reasoning and judging. Reasoning is the process by which we pass from one judgment to another which is the consequence of it. Accordingly, our judgments are distinguished into intuitive, which are not grounded upon any preceding judgment, and discursive, which are deduced from some preceding judgment by reasoning.

In all reasoning, therefore, there must be a proposition inferred, and one or more from which it is inferred. And this power of inferring, or drawing a conclusion, is only another name for reasoning; the proposition inferred, being called the *conclusion*, and the proposition, or propositions from which it is inferred, the *premises*.

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Reasoning may consist of many steps; the first conclusion being a premise to a second, that to a third, and so on, till we come to the last conclusion. A process consisting of many steps of this kind, is so easily distinguished from judgment, that it is never called by that name. But when there is only a single step to the conclusion, the distinction is less obvious, and the process is sometimes called judgment, sometimes reasoning.

It is not strange, that, in common discourse, judgment and reasoning should not be very nicely distinguished, since they are in some cases confounded even by logicians. We are taught in logic, that judgment is expressed by one proposition, but that reasoning requires two or three. But so various are the modes of speech, that what in one mode is expressed by two or three propositions, may in another mode be expressed by one. Thus I may say, *God is good; therefore good men shall be happy.* This is reasoning, of that kind which logicians call an enthymeme, consisting of an antecedent proposition, and a conclusion drawn from it. But this reasoning may be expressed by one proposition, thus: *Because God is good, good men shall be happy.* This is what they call a casual proposition, and therefore expresses judgment; yet the enthymeme, which is reasoning, expresses no more.

Reasoning, as well as judgment, must be true or false; both are grounded upon evidence which may be probable or demonstrative, and both are accompanied with assent or belief.

The power of reasoning is justly accounted one of the prerogatives of human nature; because by it many important truths have been, and may be discovered, which without it would be beyond our reach; yet it seems to be only a kind of crutch to a limited understanding. We can conceive an understanding, superior to human, to

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which that truth appears intuitively, which we can only discover by reasoning. For this cause, though we must ascribe judgment to the Almighty, we do not ascribe reasoning to him, because it implies some defect or limitation of understanding. Even among men, to use reasoning in things that are self-evident, is trifling; like a man going upon crutches when he can walk upon his legs.

What reasoning is, can be understood only by a man who has reasoned, and who is capable of reflecting upon this operation of his own mind. We can define it only by synonymous words or phrases, such as inferring, drawing a conclusion, and the like. The very notion of reasoning, therefore, can enter into the mind by no other channel than that of reflecting upon the operation of reasoning in our own minds; and the notions of premises and conclusion, of a syllogism, and all its constituent parts, of an enthymeme, sorites, demonstration, paralogism, and many others, have the same origin.

It is nature undoubtedly that gives us the capacity of reasoning. When this is wanting, no art nor education can supply it. But this capacity may be dormant through life, like the seed of a plant, which, for want of heat and moisture, never vegetates. This is probably the case of some savages.

Although the capacity be purely the gift of Nature, and probably given in very different degrees to different persons; yet the power of reasoning seems to be got by habit, as much as the power of walking or running. Its first exertions we are not able to recollect in ourselves, or clearly to discern in others. They are very feeble, and need to be led by example, and supported by authority. By degrees it acquires strength, chiefly by means of imitation and exercise.

The exercise of reasoning on various subjects not only strengthens the faculty, but furnishes the mind

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with a store of materials. Every train of reasoning, which is familiar, becomes a beaten track in the way to many others. It removes many obstacles which lay in our way, and smooths many roads which we may have occasion to travel in future disquisitions.

When men of equal natural parts apply their reasoning powers to any subject, the man who has reasoned much on the same, or on similar subjects, has a like advantage over him who has not; as the mechanic who has store of tools for his work, has of him who has his tools to make, or even to invent.

In a train of reasoning, the evidence of every step, where nothing is left to be supplied by the reader or hearer, must be immediately discernible to every man of ripe understanding who has a distinct comprehension of the premises and conclusion, and who compares them together. To be able to comprehend, in one view, a combination of steps of this kind, is more difficult, and seems to require a superior natural ability. In all, it may be much improved by habit.

But the highest talent in reasoning is the invention of proofs; by which, truths remote from the premises are brought to light. In all works of understanding, invention has the highest praise; it requires an extensive view of what relates to the subject, and a quickness in discerning those affinities and relations which may be subservient to the purpose.

In all invention, there must be some end in view: and sagacity in finding out the road that leads to this end, is, I think, what we call invention. In this chiefly, as I apprehend, and in clear and distinct conceptions, consist that superiority of understanding which we call *genius*.

In every chain of reasoning, the evidence of the last conclusion can be no greater than that of the weakest

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link of the chain, whatever may be the strength of the rest.

The most remarkable distinction of reasonings is, that some are probable, others demonstrative.

In every step of demonstrative reasoning, the inference is necessary, and we perceive it to be impossible that the conclusion should not follow from the premises. In probable reasoning, the connection between the premises and the conclusion is not necessary, nor do we perceive it to be impossible that the first should be true while the last is false.

Hence demonstrative reasoning has no degrees, nor can one demonstration be stronger than another, though, in relation to our faculties, one may be more easily comprehended than another. Every demonstration gives equal strength to the conclusion, and leaves no possibility of its being false.

It was, I think, the opinion of all the ancients, that demonstrative reasoning can be applied only to truths that are necessary, and not to those that are contingent. In this, I believe, they judged right. Of all created things, the existence, the attributes, and consequently the relations resulting from those attributes, are contingent. They depend upon the will and power of him who made them. These are matters of fact, and admit not of demonstration.

The field of demonstrative reasoning, therefore, is the various relations of things abstract, that is, of things which we conceive, without regard to their existence. Of these, as they are conceived by the mind, and are nothing but what they are conceived to be, we may have a clear and adequate comprehension. Their relations and attributes are necessary and immutable. They are the things to which the Pythagoreans and Platonists gave the name of ideas. I would beg leave to borrow this meaning of the word *idea* from those ancient phi-

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losophers, and then I must agree with them, that ideas are the only objects about which we can reason demonstratively.

There are many even of our ideas about which we can carry on no considerable train of reasoning. Though they be ever so well defined and perfectly comprehended, yet their agreements and disagreements are few, and these are discerned at once. We may go a step or two in forming a conclusion with regard to such objects, but can go no further. There are others, about which we may, by a long train of demonstrative reasoning, arrive at conclusions very remote and unexpected.

The reasonings I have met with that can be called strictly demonstrative, may, I think, be reduced to two classes. They are either metaphysical, or they are mathematical.

In metaphysical reasoning, the process is always short. The conclusion is but a step or two, seldom more, from the first principle or axiom on which it is grounded, and the different conclusions depend not one upon another.

It is otherwise in mathematical reasoning. Here the field has no limits. One proposition leads on to another, that to a third, and so on without end.

If it should be asked, why demonstrative reasoning has so wide a field in mathematics, while, in other abstract subjects, it is confined within very narrow limits? I conceive this is chiefly owing to the nature of quantity, the object of mathematics.

Every quantity, as it has magnitude, and is divisible into parts without end, so in respect of its magnitude, it has a certain ratio to every quantity of the kind. The ratios of quantities are innumerable, such as, a half, a third, a tenth, double, triple. All the powers of number are insufficient to express the variety of ratios. For there are innumerable ratios which can-

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not be perfectly expressed by numbers, such as, the ratio of the side to the diagonal of a square, of the circumference of a circle to the diameter. Of this infinite variety of ratios, every one may be clearly conceived, and distinctly expressed, so as to be in no danger of being mistaken for any other.

Extended quantities, such as lines, surfaces, solids, besides the variety of relations they have in respect of magnitude, have no less variety in respect of figure; and every mathematical figure may be accurately defined, so as to distinguish it from all others.

There is nothing of this kind in other objects of abstract reasoning. Some of them have various degrees; but these are not capable of measure, nor can be said to have an assignable ratio to others of the kind. They are either simple, or compounded of a few indivisible parts; and therefore, if we may be allowed the expression, can touch only in a few points. But mathematical quantities being made up of parts without number, can touch in innumerable points, and be compared in innumerable different ways.

There have been attempts made to measure the merit of actions by the ratios of the affections and principles of action from which they proceed. This may perhaps, in the way of analogy, serve to illustrate what was before known; but I do not think any truth can be discovered in this way. There are, no doubt, degrees of benevolence, self-love, and other affections; but, when we apply ratios to them, I apprehend we have no distinct meaning.

Some demonstrations are called direct, others indirect. The first kind leads directly to the conclusion to be proved. Of the indirect some are called demonstrations *ad absurdum*. In these the proposition contradictory to that which is to be proved is demonstrated to be false, or to lead to an absurdity; whence

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it follows, that its contradictory, that is, the proposition to be proved, is true. This inference is grounded upon an axiom in logic, that of two contradictory propositions, if one be false, the other must be true.

Another kind of indirect demonstration proceeds by enumerating all the suppositions that can possibly be made concerning the proposition to be proved, and then demonstrating, that all of them, excepting that which is to be proved, are false; whence it follows, that the excepted supposition is true. Thus one line is proved to be equal to another, by proving first that it cannot be greater, and then that it cannot be less: for it must be either greater, or less, or equal; and two of these suppositions being demonstrated to be false, the third must be true.

All these kinds of demonstration are used in mathematics, and perhaps some others. They have all equal strength. The direct demonstration is preferred where it can be had, for this reason only, as I apprehend, because it is the shortest road to the conclusion. The nature of the evidence and its strength is the same in all; only we are conducted to it by different roads.

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CHAP. II.

WHETHER MORALITY BE CAPABLE OF DEMONSTRATION.

WHAT has been said of demonstrative reasoning may help us to judge of an opinion of Mr. Locke, advanced in several places of his Essay; to wit, "That morality is capable of demonstration, as well as mathematics."

In book 3. chap. 11. having observed, that mixed modes, especially those belonging to morality, being such combinations of ideas as the mind puts together of its own choice, the signification of their names may be perfectly and exactly defined, he adds,

Sect. 16. "Upon this ground it is that I am bold to think, that morality is capable of demonstration as well as mathematics: since the precise real essence of the things moral words stand for may be perfectly known, and so the congruity or incongruity of the things themselves be certainly discovered, in which consists perfect knowledge. Nor let any one object, that the names of substances are often to be made use of in morality, as well as those of modes, from which will arise obscurity: for as to substances, when concerned in moral discourses, their divers natures are not so much inquired into as supposed: *v. g.* When we say that man is subject to law, we mean nothing by man but a corporeal rational creature. What the real essence or other qualities of that creature are, in this case, is no way considered.

Again, in book 4. chap. 3. § 18. "The idea of a Supreme Being, whose workmanship we are, and the idea of ourselves, being such as are clear in us, would, I suppose, if duly considered and pursued, afford such

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foundation of our duty and rules of action, as might place morality among the sciences capable of demonstration. The relation of other modes may certainly be perceived, as well as those of number and extension; and I cannot see why they should not be capable of demonstration, if due methods were thought on to examine or pursue their agreement or disagreement."

He afterwards gives as instances, two propositions as moral propositions, of which we may be as certain as of any in mathematics; and considers at large what may have given the advantage to the ideas of quantity, and made them be thought more capable of certainty and demonstration.

Again, in the 12th chapter of the same book, § 7, 8. "This I think I may say, that if other ideas that are the real, as well as nominal essences of their several species, were pursued in the way familiar to mathematicians, they would carry our thoughts further, and with greater evidence and clearness, than possibly we are apt to imagine. This gave me the confidence to advance that conjecture which I suggest, chap. 3. *viz.* That morality is capable of demonstration as well as mathematics."

From these passages it appears, that this opinion was not a transient thought, but what he had revolved in his mind on different occasions. He offers his reasons for it, illustrates it by examples, and considers at length the causes that have led men to think mathematics more capable of demonstration than the principles of morals.

Some of his learned correspondents, particularly his friend Mr. Molyneux, urged and importuned him to compose a system of morals according to the idea he had advanced in his Essay; and, in his answer to these solicitations, he only pleads other occupations, without suggesting any change of his opinion, or any great difficulty in the execution of what was desired.

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The reason he gives for this opinion is ingenious; and his regard for virtue, the highest prerogative of the human species, made him fond of an opinion which seemed to be favourable to virtue, and to have a just foundation in reason.

We need not, however, be afraid, that the interest of virtue may suffer by a free and candid examination of this question, or indeed of any question whatever. For the interests of truth and of virtue can never be found in opposition. Darkness and error may befriend vice, but can never be favourable to virtue.

Those philosophers who think that our determinations in morals are not real judgments, that right and wrong in human conduct are only certain feelings or sensations in the person who contemplates the action, must reject Mr. Locke's opinion without examination. For if the principles of morals be not a matter of judgment, but of feeling only, there can be no demonstration of them; nor can any other reason be given for them, but that men are so constituted by the Author of their being, as to contemplate with pleasure the actions we call virtuous, and with disgust those we call vicious.

It is not therefore to be expected, that the philosophers of this class should think this opinion of Mr. Locke worthy of examination, since it is founded upon what they think a false hypothesis. But if our determinations in morality be real judgments, and, like all other judgments, be either true or false, it is not unimportant to understand upon what kind of evidence those judgments rest.

The argument offered by Mr. Locke, to show that morality is capable of demonstration, is, "That the precise real essence of the things moral words stand for may be perfectly known, and so the congruity or incongruity of the things themselves be perfectly discovered, in which consists perfect knowledge."

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It is true, that the field of demonstration is the various relations of things conceived abstractly, of which we may have perfect and adequate conceptions. And Mr. Locke, taking all the things which moral words stand for to be of this kind, concluded that morality is as capable of demonstration as mathematics.

I acknowledge, that the names of the virtues and vices, of right and obligation, of liberty and property, stands for things abstract, which may be accurately defined, or, at least, conceived as distinctly and adequately as mathematical quantities. And thence indeed it follows, that their mutual relations may be perceived as clearly and certainly as mathematical truths.

Of this Mr. Locke gives two pertinent examples. The first, "where there is no property, there is no injustice, is," says he, "a proposition as certain as any demonstration in Euclid."

When injustice is defined to be a violation of property, it is as necessary a truth, that there can be no injustice where there is no property, as that you cannot take from a man that which he has not.

The second example is, "that no government allows absolute liberty." This is a truth no less certain and necessary.

Such abstract truths I would call metaphysical, rather than moral. We give the name of mathematical, to truths that express the relations of quantities considered abstractly; all other abstract truths may be called metaphysical. But if those mentioned by Mr. Locke are to be called moral truths, I agree with him, that there are many such that are necessarily true, and that have all the evidence that mathematical truths can have.

It ought however to be remembered, that, as was before observed, the relations of things abstract, perceivable by us, excepting those of mathematical quan-

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tities, are few, and for the most part immediately discerned, so as not to require that train of reasoning which we call demonstration. Their evidence resembles more that of mathematical axioms, than mathematical propositions.

This appears in the two propositions given as examples by Mr. Locke. The first follows immediately from the definition of injustice; the second from the definition of government. Their evidence may more properly be called intuitive than demonstrative: and this I apprehend to be the case, or nearly the case, of all abstract truths that are not mathematical, for the reason given in the last chapter.

The propositions which I think are properly called moral, are those that affirm some moral obligation to be, or not to be incumbent on one or more individual persons. To such propositions, Mr. Locke's reasoning does not apply, because the subjects of the proposition are not things whose real essence may be perfectly known. They are the creatures of God; their obligation results from the constitution which God has given them, and the circumstances in which he has placed them. That an individual has such a constitution, and is placed in such circumstances, is not an abstract and necessary, but a contingent truth. It is a matter of fact, and therefore not capable of demonstrative evidence, which belongs only to necessary truths.

The evidence which every man has of his own existence, though it be irresistible, is not demonstrative. And the same thing may be said of the evidence which every man has, that he is a moral agent, and under certain moral obligations. In like manner, the evidence we have of the existence of other men is not demonstrative; nor is the evidence we have of their being endowed with those faculties which make them moral and accountable agents.

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If a man had not the faculty given him by God of perceiving certain things in conduct to be right, and others to be wrong, and of perceiving his obligation to do what is right, and not to do what is wrong, he would not be a moral and accountable being.

If a man be endowed with such a faculty, there must be some things, which, by this faculty, are immediately discerned to be right, and others to be wrong; and therefore there must be in morals, as in other sciences, first principles, which do not derive their evidence from any antecedent principles, but may be said to be intuitively discerned.

Moral truths, therefore, may be divided into two classes; to wit, such as are self-evident to every man whose understanding and moral faculty are ripe, and such as are deduced by reasoning from those that are self-evident. If the first be not discerned without reasoning, the last never can be, by any reasoning.

If any man could say with sincerity, that he is conscious of no obligation to consult his own present and future happiness; to be faithful to his engagements; to obey his Maker; to injure no man; I know not what reasoning, either probable or demonstrative, I could use to convince him of any moral duty. As you cannot reason in mathematics with a man who denies the axioms, as little can you reason with a man in morals who denies the first principles of morals. The man who does not, by the light of his own mind, perceive some things in conduct to be right, and others to be wrong, is as incapable of reasoning about morals, as a blind man is about colours. Such a man, if any such man ever was, would be no moral agent, nor capable of any moral obligation.

Some first principles of morals must be immediately discerned, otherwise we have no foundation on which others can rest, or from which we can reason.

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Every man knows certainly, that, what he approves in other men he ought to do in like circumstances, and that he ought not to do what he condemns in other men. Every man knows that he ought, with candour, to use the best means of knowing his duty. To every man who has a conscience, these things are self-evident. They are immediate dictates of our moral faculty, which is a part of the human constitution; and every man condemns himself, whether he will or not, when he knowingly acts contrary to them. The evidence of these fundamental principles of morals, and of others that might be named, appears therefore to me to be intuitive rather than demonstrative.

The man who acts according to the dictates of his conscience, and takes due pains to be rightly informed of his duty, is a perfect man with regard to morals, and merits no blame, whatever may be the imperfections or errors of his understanding. He who knowingly acts contrary to them is conscious of guilt, and self-condemned. Every particular action that falls evidently within the fundamental rules of morals is evidently his duty; and it requires no reasoning to convince him that it is so.

Thus I think it appears, that every man of common understanding knows certainly, and without reasoning, the ultimate ends he ought to pursue, and that reasoning is necessary only to discover the most proper means of attaining them; and in this, indeed, a good man may often be in doubt.

Thus, a magistrate knows that it is his duty to promote the good of the community which has intrusted him with authority; and to offer to prove this to him by reasoning would be to affront him. But whether such a scheme of conduct in his office, or another, may best serve that end, he may in many cases be doubtful. I believe, in such cases, he can very rarely have demon-

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strative evidence. His conscience determines the end he ought to pursue, and he has intuitive evidence that his end is good; but prudence must determine the means of attaining that end; and prudence can very rarely use demonstrative reasoning, but must rest in what appears most probable.

I apprehend, that in every kind of duty we owe to God or man, the case is similar: that is, that the obligation of the most general rules of duty is self-evident; that the application of those rules to particular actions is often no less evident; and that, when it is not evident, but requires reasoning, that reasoning can very rarely be of the demonstrative, but must be of the probable kind. Sometimes it depends upon the temper, and talents, and circumstances of the man himself; sometimes upon the character and circumstances of others; sometimes upon both; and these are things which admit not of demonstration.

Every man is bound to employ the talents which God has given him to the best purpose; but if, through accidents which he could not foresee, or ignorance which was invincible, they be less usefully employed than they might have been, this will not be imputed to him by his righteous Judge.

It is a common and a just observation, that the man of virtue plays a surer game in order to obtain his end than the man of the world. It is not, however, because he reasons better concerning the means of attaining his end; for the children of this world are often wiser in their generation than the children of light. But the reason of the observation is, that involuntary errors, unforeseen accidents, and invincible ignorance, which affect deeply all the concerns of the present world, have no effect upon virtue or its reward.

In the common occurrences of life, a man of integrity, who has exercised his moral faculty in judging what

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is right and what is wrong, sees his duty without reasoning, as he sees the highway. The cases that require reasoning are few, compared with those that require none; and a man may be very honest and virtuous who cannot reason, and who knows not what demonstration means.

The power of reasoning, in those that have it, may be abused in morals, as in other matters. To a man who uses it with an upright heart, and a single eye to find what is his duty, it will be of great use; but when it is used to justify what a man has a strong inclination to do, it will only serve to deceive himself and others. When a man can reason, his passions will reason, and they are the most cunning sophists we meet with.

If the rules of virtue were left to be discovered by demonstrative reasoning, or by reasoning of any kind, sad would be the condition of the far greater part of men, who have not the means of cultivating the power of reasoning. As virtue is the business of all men, the first principles of it are written in their hearts, in characters so legible, that no man can pretend ignorance of them, or of his obligation to practise them.

Some knowledge of duty and of moral obligation is necessary to all men. Without it they could not be moral and accountable creatures, nor capable of being members of civil society. It may therefore be presumed, that nature has put this knowledge within the reach of all men. Reasoning and demonstration are weapons which the greatest part of mankind never was able to wield. The knowledge that is necessary to all, must be attainable by all. We see it is so in what pertains to the natural life of man.

Some knowledge of things that are useful, and things that are hurtful, is so necessary to all men, that without it the species would soon perish. But it is not by reasoning that this knowledge is got, far less by

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demonstrative reasoning. It is by our senses, by memory, by experience, by information; means of knowledge that are open to all men, and put the learned and the unlearned, those who can reason and those who cannot, upon a level.

It may therefore be expected, from the analogy of nature, that such a knowledge of morals as is necessary to all men, should be had by means more suited to the abilities of all men than demonstrative reasoning is.

This, I apprehend, is in fact the case. When men's faculties are ripe, the first principles of morals, into which all moral reasoning may be resolved, are perceived intuitively, and in a manner more analogous to the perceptions of sense than to the conclusions of demonstrative reasoning.

Upon the whole, I agree with Mr. Locke, that propositions expressing the congruities and incongruities of things abstract, which moral words stand for, may have all the evidence of mathematical truths. But this is not peculiar to things which moral words stand for. It is common to abstract propositions of every kind. For instance, you cannot take from a man what he has not. A man cannot be bound and perfectly free at the same time. I think no man will call these moral truths, but they are necessary truths, and as evident as any in mathematics. Indeed, they are very nearly allied to the two which Mr. Locke gives as instances of moral propositions capable of demonstration. Of such abstract propositions, I think it may more properly be said, that they have the evidence of mathematical axioms, than that they are capable of demonstration.

There are propositions of another kind, which alone deserve the name of moral propositions. They are such as affirm something to be the duty of persons that really exist. These are not abstract propositions; and therefore Mr. Locke's reasoning does not apply to

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them. The truth of all such propositions depends upon the constitution and circumstances of the persons to whom they are applied.

Of such propositions, there are some that are self-evident to every man that has a conscience; and these are the principles from which all moral reasoning must be drawn. They may be called the axioms of morals. But our reasoning from these axioms to any duty that is not self-evident, can very rarely be demonstrative. Nor is this any detriment to the cause of virtue, because to act against what appears most probable in a matter of duty, is as real a trespass against the first principles of morality, as to act against demonstration; and because he who has but one talent in reasoning, and makes the proper use of it, shall be accepted, as well as he to whom God has given ten.

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CHAP. III.

OF PROBABLE REASONING.

The field of demonstration, as has been observed, is necessary truth; the field of probable reasoning is contingent truth, not what necessarily must be at all times, but what is, or was, or shall be.

No contingent truth, is capable of strict demonstration; but necessary truths may sometimes have probable evidence.

Dr. Wallis discovered many important mathematical truths, by that kind of induction which draws a general conclusion from particular premises. This is not strict demonstration, but, in some cases, gives as full conviction as demonstration itself; and a man may be certain, that a truth is demonstrable before it ever has been demonstrated. In other cases, a mathematical proposition may have such probable evidence from induction or analogy, as encourages the mathematician to investigate its demonstration. But still the reasoning proper to mathematical and other necessary truths, is demonstration; and that which is proper to contingent truths, is probable reasoning.

These two kinds of reasoning differ in other respects. In demonstrative reasoning, one argument is as good as a thousand. One demonstration may be more elegant than another; it may be more easily comprehended, or it may be more subservient to some purpose beyond the present. On any of these accounts it may deserve a preference: but then it is sufficient by itself; it needs no aid from another; it can receive none. To add more demonstrations of the same conclusion, would be a kind of tautology in reasoning; because one demonstration, clearly comprehended, gives all the evidence we are capable of receiving.

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The strength of probable reasoning, for the most part, depends not upon any one argument, but upon many, which unite their force, and lead to the same conclusion. Any one of them by itself would be insufficient to convince; but the whole taken together may have a force that is irresistible, so that to desire more evidence would be absurd. Would any man seek new arguments to prove that there were such persons as king Charles the first, or Oliver Cromwell?

Such evidence may be compared to a rope made up of many slender filaments twisted together. The rope has strength more than sufficient to bear the stress laid upon it, though no one of the filaments of which it is composed would be sufficient for that purpose.

It is a common observation, that it is unreasonable to require demonstration for things which do not admit of it. It is no less unreasonable to require reasoning of any kind for things which are known without reasoning. All reasoning must be grounded upon truths which are known without reasoning. In every branch of real knowledge there must be first principles whose truth is known intuitively, without reasoning, either probable or demonstrative. They are not grounded on reasoning, but all reasoning is grounded on them. It has been shown, that there are first principles of necessary truths, and first principles of contingent truths. Demonstrative reasoning is grounded upon the former, and probable reasoning upon the latter.

That we may not be embarrassed by the ambiguity of words, it is proper to observe, that there is a popular meaning of *probable evidence*, which ought not to be confounded with the philosophical meaning above explained.

In common language, probable evidence is considered as an inferior degree of evidence, and is opposed

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to certainty: so that what is certain is more than probable, and what is only probable is not certain. Philosophers consider probable evidence, not as a degree, but as a species of evidence which is opposed, not to certainty, but to another species of evidence called demonstration.

Demonstrative evidence has no degrees; but probable evidence, taken in the philosophical sense, has all degrees, from the very least, to the greatest, which we call certainty.

That there is such a city as Rome, I am as certain as of any proposition in Euclid; but the evidence is not demonstrative, but of that kind which philosophers call probable. Yet, in common language, it would sound oddly to say, it is probable there is such a city as Rome; because it would imply some degree of doubt or uncertainty.

Taking probable evidence, therefore, in the philosophical sense, as it is opposed to demonstrative, it may have any degree of evidence, from the least to the greatest.

I think, in most cases, we measure the degrees of evidence by the effect they have upon a sound understanding, when comprehended clearly and without prejudice. Every degree of evidence perceived by the mind, produces a proportioned degree of assent or belief. The judgment may be in perfect suspense between two contradictory opinions, when there is no evidence for either, or equal evidence for both. The least preponderancy on one side inclines the judgment in proportion. Belief is mixed with doubt, more or less, until we come to the highest degree of evidence, when all doubt vanishes, and the belief is firm and immoveable. This degree of evidence, the highest the human faculties can attain, we call certainty.

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Probable evidence not only differs in kind from demonstrative, but is itself of different kinds. The chief of these I shall mention, without pretending to make a complete enumeration.

The first kind is that of human testimony, upon which the greatest part of human knowledge is built.

The faith of history depends upon it, as well as the judgment of solemn tribunals, with regard to men's acquired rights, and with regard to their guilt or innocence when they are charged with crimes. A great part of the business of the judge, of counsel at the bar, of the historian, the critic, and the antiquarian, is to canvass and weigh this kind of evidence; and no man can act with common prudence in the ordinary occurrences of life, who has not some competent judgment of it.

The belief we give to testimony in many cases is not solely grounded upon the veracity of the testifier. In a single testimony, we consider the motives a man might have to falsify. If there be no appearance of any such motive, much more if there be motives on the other side, his testimony has weight independent of his moral character. If the testimony be circumstantial, we consider how far the circumstances agree together, and with things that are known. It is so very difficult to fabricate a story, which cannot be detected by a judicious examination of the circumstances, that it acquires evidence, by being able to bear such a trial. There is an art in detecting false evidence in judicial proceedings, well known to able judges and barristers; so that I believe few false witnesses leave the bar without suspicion of their guilt.

When there is an agreement of many witnesses in a great variety of circumstances, without the possibility of a previous concert, the evidence may be equal to that of demonstration.

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A second kind of probable evidence, is the authority of those who are good judges of the point in question. The supreme court of judicature of the British nation is often determined by the opinion of lawyers in a point of law, of physicians in a point of medicine, and of other artists, in what relates to their several professions. And, in the common affairs of life, we frequently rely upon the judgment of others, in points of which we are not proper judges ourselves.

A third kind of probable evidence, is that by which we recognize the identity of things, and persons of our acquaintance. That two swords, two horses, or two persons, may be so perfectly alike, as not to be distinguishable by those to whom they are best known, cannot be shown to be impossible. But we learn either from nature, or from experience, that it never happens; or so very rarely, that a person or thing, well known to us, is immediately recognized without any doubt, when we perceive the marks or signs by which we were in use to distinguish it from all other individuals of the kind.

This evidence we rely upon in the most important affairs of life; and, by this evidence, the identity, both of things and of persons, is determined in courts of judicature.

A fourth kind of probable evidence, is that which we have of men's future actions and conduct, from the general principles of action in man, or from our knowledge of the individuals.

Notwithstanding the folly and vice that is to be found among men, there is a certain degree of prudence and probity which we rely upon in every man that is not insane. If it were not so, no man would be safe in the company of another, and there could be no society among mankind. If men were as much disposed to hurt, as to do good, to lie as to speak truth, they could not live

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together; they would keep at as great distance from one another as possible, and the race would soon perish.

We expect that men will take some care of themselves, of their family, friends, and reputation: that they will not injure others without some temptation: that they will have some gratitude for good offices, and some resentment of injuries.

Such maxims with regard to human conduct are the foundation of all political reasoning, and of common prudence in the conduct of life. Hardly can a man form any project in public or in private life, which does not depend upon the conduct of other men, as well as his own, and which does not go upon the supposition that men will act such a part in such circumstances. This evidence may be probable in a very high degree, but can never be demonstrative. The best concerted project may fail, and wise counsels may be frustrated, because some individual acted a part which it would have been against all reason to expect.

Another kind of probable evidence, the counterpart of the last, is that by which we collect men's characters and designs from their actions, speech, and other external signs.

We see not men's hearts, nor the principles by which they are actuated; but there are external signs of their principles and dispositions, which, though not certain, may sometimes be more trusted than their professions; and it is from external signs that we must draw all the knowledge we can attain of men's characters.

The next kind of probable evidence I mention, is that which mathematicians call the probability of chances.

We attribute some events to chance, because we know only the remote cause which must produce some one event of a number; but know not the more imme-

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diate cause which determines a particular event of that number, in preference to the others.

I think all the chances about which we reason in mathematics are of this kind. Thus, in throwing a just die upon a table, we say it is an equal chance which of the six sides shall be turned up; because neither the person who throws, nor the bystanders know the precise measure of force and direction necessary to turn up any one side rather than another. There are here, therefore, six events, one of which must happen; and as all are supposed to have an equal probability, the probability of any one side being turned up, the ace, for instance, is as one to the remaining number five.

The probability of turning up two aces with two dice is as one to thirty-five; because here there are thirty-six events, each of which has equal probability.

Upon such principles as these, the doctrine of chances has furnished a field of demonstrative reasoning of great extent, although the events about which this reasoning is employed be not necessary, but contingent, and be not certain, but probable.

This may seem to contradict a principle before advanced, that contingent truths are not capable of demonstration; but it does not: for, in the mathematical reasonings about chance, the conclusion demonstrated, is not, that such an event shall happen, but that the probability of its happening bears such a ratio to the probability of its failing; and this conclusion is necessary upon the suppositions on which it is grounded.

The last kind of probable evidence I shall mention, is that by which the known laws of nature have been discovered, and the effects which have been produced by them in former ages, or which may be expected in time to come.

The laws of nature are the rules by which the Supreme Being governs the world. We deduce them only

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from facts that fall within our own observation, or are properly attested by those who have observed them.

The knowledge of some of the laws of nature is necessary to all men in the conduct of life. These are soon discovered, even by savages. They know that fire burns, that water drowns, that bodies gravitate toward the earth. They know that day and night, summer and winter, regularly succeed each other. As far back as their experience and information reach, they know that these have happened regularly; and, upon this ground, they are led, by the constitution of human nature, to expect that they will happen in time to come, in like circumstances.

The knowledge which the philosopher attains of the laws of nature differs from that of the vulgar, not in the first principles on which it is grounded, but in its extent and accuracy. He collects with care the phenomena that lead to the same conclusion, and compares them with those that seem to contradict or to limit it. He observes the circumstances on which every phenomenon depends, and distinguishes them carefully from those that are accidentally conjoined with it. He puts natural bodies in their various situations, and applies them to one another in various ways, on purpose to observe the effect; and thus acquires from his senses a more extensive knowledge of the course of nature in a short time, than could be collected by casual observation in many ages.

But what is the result of his laborious researches? It is, that, as far as he has been able to observe, such things have always happened in such circumstances, and such bodies have always been found to have such properties. These are matters of fact, attested by sense, memory and testimony, just as the few facts which the vulgar know are attested to them.

And what conclusions does the philosopher draw from the facts he has collected? They are, that like

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events have happened in former times in like circumstances, and will happen in time to come; and these conclusions are built on the very same ground on which the simple rustic concludes that the sun will rise tomorrow.

Facts reduced to general rules, and the consequences of those general rules, are all that we really know of the material world. And the evidence that such general rules have no exceptions, as well as the evidence that they will be the same in time to come as they have been in time past, can never be demonstrative. It is only that species of evidence which philosophers call probable. General rules may have exceptions or limitations which no man ever had occasion to observe. The laws of nature may be changed by him who established them. But we are led by our constitution to rely upon their continuance with as little doubt as if it was demonstrable.

I pretend not to have made a complete enumeration of all the kinds of probable evidence; but those I have mentioned are sufficient to show, that the far greatest part, and the most interesting part of our knowledge, must rest upon evidence of this kind; and that many things are certain for which we have only that kind of evidence which philosophers call probable.

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CHAP. IV.

OF MR. HUME'S SKEPTICISM WITH REGARD TO REASON.

In the Treatise of Human Nature, book 1. part 4. sect. 1. the author undertakes to prove two points: 1st, that all that is called human knowledge, meaning demonstrative knowledge, is only probability; and 2dly, that this probability, when duly examined, vanishes by degrees, and leaves at last no evidence at all: so that in the issue, there is no ground to believe any one proposition rather than its contrary, and "all those are certainly fools who reason or believe any thing."

According to this account, reason, that boasted prerogative of man, and the light of his mind, is an *ignis fatuus*, which misleads the wandering traveller, and leaves him at last in absolute darkness.

How unhappy is the condition of man, born under a necessity of believing contradictions, and of trusting to a guide who confesses herself to be a false one!

It is some comfort, that this doctrine can never be seriously adopted by any man in his senses. And after this author had shown that "all the rules of logic require a total extinction of all belief and evidence," he himself, and all men that are not insane, must have believed many things, and yielded assent to the evidence which he had extinguished.

This indeed he is so candid as to acknowledge. "He finds himself absolutely and necessarily determined to live and talk and act like other people in the common affairs of life. And since reason is incapable of dispelling these clouds, most fortunately it happens, that nature herself suffices to that purpose, and cures him of this philosophical melancholy and delirium." See sect. 7.

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This was surely a very kind and friendly interposition of nature; for the effects of this philosophical delirium, if carried into life, must have been very melancholy.

But what pity is it, that nature, whatever is meant by that personage, so kind in curing this delirium, should be so cruel as to cause it. Doth the same fountain send forth sweet waters and bitter? Is it not more probable, that if the cure was the work of nature, the disease came from another hand, and was the work of the philosopher?

To pretend to prove by reasoning that there is no force in reason, does indeed look like a philosophical delirium. It is like a man's pretending to see clearly, that he himself and all other men are blind.

A common symptom of delirium is, to think that all other men are fools or mad. This appears to have been the case of our author, who concluded, "That all those are certainly fools who reason or believe any thing."

Whatever was the cause of this delirium, it must be granted, that if it was real and not feigned, it was not to be cured by reasoning: for what can be more absurd than to attempt to convince a man by reasoning who disowns the authority of reason. It was therefore very fortunate that nature found other means of curing it.

It may, however, not be improper to inquire, whether, as the author thinks, it was produced by a just application of the rules of logic, or, as others may be apt to think, by the misapplication and abuse of them.

First, Because we are fallible, the author infers that all knowledge degenerates into probability.

That man, and probably every created being, is fallible; and that a fallible being cannot have that

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perfect comprehension and assurance of truth which an infallible being has, I think ought to be granted. It becomes a fallible being to be modest, open to new light, and sensible, that by some false bias, or by rash judging, he may be misled. If this be called a degree of skepticism, I cannot help approving of it, being persuaded, that the man who makes the best use he can of the faculties which God has given him, without thinking them more perfect than they really are, may have all the belief that is necessary in the conduct of life, and all that is necessary to his acceptance with his Maker.

It is granted then, that human judgments ought always to be formed with an humble sense of our fallibility in judging.

This is all that can be inferred by the rules of logic from our being fallible. And if this be all that is meant by our knowledge degenerating into probability, I know no person of a different opinion.

But it may be observed, that the author here uses the word *probability* in a sense for which I know no authority but his own. Philosophers understand probability as opposed to demonstration; the vulgar as opposed to certainty; but this author understands it as opposed to infallibility, which no man claims.

One who believes himself to be fallible, may still hold it to be certain that two and two make four, and that two contradictory propositions cannot both be true. He may believe some things to be probable only, and other things to be demonstrable, without making any pretence to infallibility.

If we use words in their proper meaning, it is impossible that demonstration should degenerate into probability from the imperfection of our faculties. Our judgment cannot change the nature of the things about which we judge. What is really demonstration,

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will still be so, whatever judgment we form concerning it. It may likewise be observed, that when we mistake that for demonstration, which really is not, the consequence of this mistake is, not that demonstration degenerates into probability, but that what we took to be demonstration is no proof at all; for one false step in a demonstration destroys the whole, but cannot turn it into another kind of proof.

Upon the whole, then, this first conclusion of our author, that the fallibility of human judgment turns all knowledge into probability, if understood literally, is absurd; but if it be only a figure of speech, and means no more, but that, in all our judgments, we ought to be sensible of our fallibility, and ought to hold our opinions with that modesty that becomes fallible creatures, which I take to be what the author meant, this, I think, nobody denies, nor was it necessary to enter into a laborious proof of it.

One is never in greater danger of transgressing against the rules of logic, than in attempting to prove what needs no proof. Of this we have an instance in this very case: for the author begins his proof, that all human judgments are fallible, with affirming that some are infallible.

"In all demonstrative sciences," says he, "the rules are certain and infallible; but when we apply them, our fallible and uncertain faculties are very apt to depart from them, and fall into error."

He had forgot, surely, that the rules of demonstrative sciences are discovered by our fallible and uncertain faculties, and have no authority but that of human judgment. If they be infallible, some human judgments are infallible; and there are many in various branches of human knowledge which have as good a claim to infallibility as the rules of the demonstrative sciences.

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We have reason here to find fault with our author for not being skeptical enough, as well as for a mistake in reasoning, when he claims infallibility to certain decisions of the human faculties, in order to prove that all their decisions are fallible.

The *second* point which he attempts to prove, is, that this probability, when duly examined, suffers a continual diminution, and at last a total extinction.

The obvious consequence of this is, that no fallible being can have good reason to believe any thing at all; but let us hear the proof.

"In every judgment, we ought to correct the first judgment derived from the nature of the object, by another judgment derived from the nature of the understanding. Besides the original uncertainty inherent in the subject, there arises another, derived from the weakness of the faculty which judges. Having adjusted these two uncertainties together, we are obliged, by our reason, to add a new uncertainty, derived from the possibility of error in the estimation we make of the truth and fidelity of our faculties. This is a doubt, of which, if we would closely pursue our reasoning, we cannot avoid giving a decision. But this decision, though it should be favourable to our preceding judgment, being founded only on probability, must weaken still further our first evidence. The third uncertainty must in like manner be criticised by a fourth, and so on without end.

"Now, as every one of these uncertainties takes away a part of the original evidence, it must at last be reduced to nothing. Let our first belief be ever so strong, it must infallibly perish, by passing through so many examinations, each of which carries off somewhat of its force and vigour. No finite object can subsist under a decrease repeated *in infinitum*.

"When I reflect on the natural fallibility of my judgment, I have less confidence in my opinions, than

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when I only consider the objects concerning which I reason. And when I proceed still farther, to turn the scrutiny against every successive estimation I make of my faculties, all the rules of logic require a continual diminution, and at last a total extinction of belief and evidence."

This is the author's Achilleon argument against the evidence of reason, from which he concludes, that a man who would govern his belief by reason, must believe nothing at all, and that belief is an act not of the cogitative, but of the sensitive part of our nature.

If there be any such thing as motion, said an ancient skeptic, the swift-footed Achilles could never overtake an old man in a journey. For, suppose the old man to set out a thousand paces before Achilles, and that while Achilles has travelled the thousand paces, the old man has gone five hundred; when Achilles has gone the five hundred, the old man has gone two hundred and fifty; and when Achilles has gone the two hundred and fifty, the old man is still one hundred and twenty-five before him. Repeat these estimations *in infinitum*, and you will still find the old man foremost; therefore Achilles can never overtake him; therefore there can be no such thing as motion.

The reasoning of the modern skeptic against reason is equally ingenious, and equally convincing. Indeed, they have a great similarity.

If we trace the journey of Achilles two thousand paces, we shall find the very point where the old man is overtaken: but this short journey, by dividing it into an infinite number of stages, with corresponding estimations, is made to appear infinite. In like manner, our author, subjecting every judgment to an infinite number of successive probable estimations, reduces the evidence to nothing.

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To return then to the argument of the modern skeptic. I examine the proof of a theorem of Euclid. It appears to me to be strict demonstration. But I may have overlooked some fallacy; therefore I examine it again and again, but can find no flaw in it. I find all that have examined it agree with me. I have now that evidence of the truth of the proposition, which I and all men call demonstration, and that belief of it, which we call certainty.

Here my skeptical friend interposes, and assures me, that the rules of logic reduce this demonstration to no evidence at all. I am willing to hear what step in it he thinks fallacious, and why. He makes no objection to any part of the demonstration, but pleads my fallibility in judging. I have made the proper allowance for this already, by being open to conviction. But, says he, there are two uncertainties, the first inherent in the subject, which I have already shown to have only probable evidence; the second arising from the weakness of the faculty that judges. I answer, It is the weakness of the faculty only that reduces this demonstration to what you call probability. You must not therefore make it a second uncertainty; for it is the same with the first. To take credit twice in an account for the same article is not agreeable to the rules of logic. Hitherto therefore there is but one uncertainty; to wit, my fallibility in judging.

But, says my friend, you are obliged by reason to add a new uncertainty, derived from the possibility of error in the estimation you make of the truth and fidelity of your faculties. I answer,

This estimation is ambiguously expressed; it may either mean an estimation of my liableness to err by the misapplication and abuse of my faculties; or it may mean an estimation of my liableness to err, by conceiving my faculties to be true and faithful while they may be false and fallacious in themselves, even when applied

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in the best manner. I shall consider this estimation in each of these senses.

If the first be the estimation meant, it is true that reason directs us, as fallible creatures, to carry along with us, in all our judgments, a sense of our fallibility. It is true also, that we are in greater danger of erring in some cases, and less in others; and that this danger of erring may, according to the circumstances of the case, admit of an estimation, which we ought likewise to carry along with us in every judgment we form.

When a demonstration is short and plain; when the point to be proved does not touch our interest or our passions; when the faculty of judging in such cases, has acquired strength by much exercise, there is less danger of erring; when the contrary circumstances take place, there is more.

In the present case, every circumstance is favourable to the judgment I have formed. There cannot be less danger of erring in any case, excepting perhaps when I judge of a self-evident axiom.

The skeptic further urges, that this decision, though favourable to my first judgment, being founded only on probability, must still weaken the evidence of that judgment.

Here I cannot help being of a quite contrary opinion; nor can I imagine how an ingenious author could impose upon himself so grossly, for surely he did not intend to impose upon his reader.

After repeated examination of a proposition of Euclid, I judge it to be strictly demonstrated; this is my first judgment. But as I am liable to err from various causes, I consider how far I may have been misled by any of these causes in this judgment. My decision upon this second point is favourable to my first judgment, and therefore, as I apprehend, must strengthen it. To say, that this decision, because it is only proba-

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bie, must weaken the first evidence, seems to me contrary to all rules of logic, and to common sense.

The first judgment may be compared to the testimony of a credible witness; the second, after a scrutiny into the character of the witness, wipes off every objection that can be made to it, and therefore surely must confirm and not weaken his testimony.

But let us suppose, that, in another case, I examine my first judgment upon some point, and find, that it was attended with unfavourable circumstances. What, in reason, and according to the rules of logic, ought to be the effect of this discovery?

The effect surely will be, and ought to be, to make me less confident in my first judgment, until I examine the point anew in more favourable circumstances. If it be a matter of importance, I return to weigh the evidence of my first judgment. If it was precipitate before, it must now be deliberate in every point. If at first I was in passion, I must now be cool. If I had an interest in the decision, I must place the interest on the other side.

It is evident, that this review of the subject may confirm my first judgment, notwithstanding the suspicious circumstances that attended it. Though the judge was biassed or corrupted, it does not follow, that the sentence was unjust. The rectitude of the decision does not depend upon the character of the judge, but upon the nature of the case. From that only, it must be determined whether the decision be just. The circumstances that rendered it suspicious are mere presumptions, which have no force against direct evidence.

Thus, I have considered the effect of this estimation of our liableness to err in our first judgment, and have allowed to it all the effect that reason and the rules of logic permit. In the case I first supposed, and in every

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case where we can discover no cause of error, it affords a presumption in favour of the first judgment. In other cases, it may afford a presumption against it. But the rules of logic require, that we should not judge by presumptions, where we have direct evidence. The effect of an unfavourable presumption should only be, to make us examine the evidence with the greater care.

The skeptic urges, in the last place, that this estimation must be subjected to another estimation, that to another, and so on *in infinitum;* and as every new estimation takes away from the evidence of the first judgment, it must at last be totally annihilated.

I answer, *first,* It has been shewn above, that the first estimation, supposing it unfavourable, can only afford a presumption against the first judgment; the second, upon the same supposition, will be only the presumption of a presumption; and the third, the presumption that there is a presumption of a presumption. This infinite series of presumption resembles an infinite series of quantities decreasing in geometrical proportion, which amounts only to a finite sum. The infinite series of stages of Achilles's journey after the old man, amounts only to two thousand paces; nor can this infinite series of presumptions outweigh one solid argument in favour of the first judgment, supposing them all to be unfavourable to it.

2dly, I have shown, that the estimation of our first judgment may strengthen it; and the same thing may be said of all the subsequent estimations. It would, therefore, be as reasonable to conclude, that the first judgment will be brought to infallible certainty when this series of estimations is wholly in its favour, as that its evidence will be brought to nothing by such a series supposed to be wholly unfavourable to it. But,

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in reality, one serious and cool re-examination of the evidence by which our first judgment is supported, has, and in reason ought to have, more force to strengthen or weaken it, than an infinite series of such estimations as our author requires.

3dly, I know no reason nor rule in logic, that requires that such a series of estimations should follow every particular judgment.

A wise man who has practised reasoning knows that he is fallible, and carries this conviction along with him in every judgment he forms. He knows likewise, that he is more liable to err in some cases than in others. He has a scale in his mind, by which he estimates his liableness to err, and by this he regulates the degree of his assent in his first judgment upon any point.

The author's reasoning supposes, that a man, when he forms his first judgment, conceives himself to be infallible; that by a second and subsequent judgment, he discovers that he is not infallible; and that by a third judgment, subsequent to the second, he estimates his liableness to err in such a case as the present.

If the man proceed in this order, I grant, that his second judgment will, with good reason, bring down the first from supposed infallibility to fallibility; and that his third judgment will, in some degree, either strengthen or weaken the first, as it is corrected by the second.

But every man of understanding proceeds in a contrary order. When about to judge in any particular point, he knows already that he is not infallible. He knows what are the cases in which he is most or least liable to err. The conviction of these things is always present to his mind, and influences the degree of his assent in his first judgment, as far as to him appears reasonable.

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If he should afterward find reason to suspect his first judgment, and desires to have all the satisfaction his faculties can give, reason will direct him not to form such a series of estimations upon estimations, as this author requires, but to examine the evidence of his first judgment carefully and cooly; and this review may very reasonably, according to its result, either strengthen or weaken, or totally overturn his first judgment.

This infinite series of estimations, therefore, is not the method that reason directs in order to form our judgment in any case. It is introduced without necessity, without any use but to puzzle the understanding, and to make us think, that to judge, even in the simplest and plainest cases, is a matter of insurmountable difficulty and endless labour; just as the ancient skeptic, to make a journey of two thousand paces appear endless, divided it into an infinite number of stages.

But we observed, that the estimation which our author requires may admit of another meaning, which indeed is more agreeable to the expression, but inconsistent with what he advanced before.

By the possibility of error in the estimation of the truth and fidelity of our faculties, may be meant, that we may err by esteeming our faculties true and faithful, while they may be false and fallacious, even when used according to the rules of reason and logic.

If this be meant, I answer, 1st, that the truth and fidelity of our faculty of judging is, and must be taken for granted in every judgment and in every estimation.

If the skeptic can seriously doubt of the truth and fidelity of his faculty of judging when properly used, and suspend his judgment upon that point till he finds proof, his skepticism admits of no cure by reasoning, and he must even continue in it until he have new fac-

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ulties given him, which shall have authority to sit in judgment upon the old. Nor is there any need of an endless succession of doubts upon this subject, for the first puts an end to all judgment and reasoning, and to the possibility of conviction by that means. The skeptic has here got possession of a strong hold which is impregnable to reasoning, and we must leave him in possession of it, till nature, by other means, makes him give it up.

2dly, I observe, that this ground of skepticism, from the supposed infidelity of our faculties, contradicts what the author before advanced in this very argument; to wit, that "the rules of the demonstrative sciences are certain and infallible, and that truth is the natural effect of reason, and that error arises from the irruption of other causes."

But perhaps he made these concessions unwarily. He is therefore at liberty to retract them, and to rest his skepticism upon this sole foundation, that no reasoning can prove the truth and fidelity of our faculties. Here he stands upon firm ground: for it is evident, that every argument offered to prove the truth and fidelity of our faculties, takes for granted the thing in question, and is therefore that kind of sophism which logicians call *petitio principi*.

All we would ask of this kind of skeptic is, that he would be uniform and consistent, and that his practice in life do not belie his profession of skepticism with regard to the fidelity of his faculties: for the want of faith, as well as faith itself, is best shown by works. If a skeptic avoid the fire as much as those who believe it dangerous to go into it, we can hardly avoid thinking his skepticism to be feigned, and not real.

Our author indeed was aware, that neither his skepticism, nor that of any other person, was able to endure this trial, and therefore enters a caveat against it.

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"Neither I," says he, "nor any other person, was ever sincerely and constantly of that opinion. Nature, by an absolute and uncontrollable necessity, has determined us to judge, as well as to breathe and feel. My intention, therefore," says he, "in displaying so carefully the arguments of that fantastic sect, is only to make the reader sensible of the truth of my hypothesis, that all our reasonings concerning causes and effects, are derived from nothing but custom, and that belief is more properly an act of the sensitive than of the cogitative part of our nature."

We have before considered the first part of this hypothesis, Whether our reasoning about causes be derived only from custom?

The other part of the author's hypothesis here mentioned is darkly expressed, though the expression seems to be studied, as it is put in italics. It cannot surely mean that belief is not an act of thinking. It is not, therefore, the power of thinking that he calls the cogitative part of our nature. Neither can it be the power of judging, for all belief implies judgment; and to believe a proposition means the same thing as to judge it to be true. It seems, therefore, to be the power of reasoning that he calls the cogitative part of our nature.

If this be the meaning, I agree to it in part. The belief of first principles is not an act of the reasoning power: for all reasoning must be grounded upon them. We judge them to be true, and believe them without reasoning. But why this power of judging of first principles should be called the sensitive part of our nature, I do not understand.

As our belief of first principles is an act of pure judgment without reasoning; so our belief of the conclusions drawn by reasoning from first principles,

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may, I think, be called an act of the reasoning faculty.

Upon the whole, I see only two conclusions that can be fairly drawn from this profound and intricate reasoning against reason. The first is, that we are fallible in all our judgments and in all our reasonings. The second, that the truth and fidelity of our faculties can never be proved by reasoning; and therefore our belief of it cannot be founded on reasoning. If the last be what the author calls his hypothesis, I subscribe to it, and think it not an hypothesis, but a manifest truth; though I conceive it to be very improperly expressed, by saying, that belief is more properly an act of the sensitive than of the cogitative part of our nature.

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ESSAY VIII.

OF TASTE.

CHAP. I.

OF TASTE IN GENERAL.

THAT power of the mind by which we are capable of discerning and relishing the beauties of nature, and whatever is excellent in the fine arts, is called *taste.*

The external sense of taste, by which we distinguish and relish the various kinds of food, has given occasion to a metaphorical application of its name to this internal power of the mind, by which we perceive what is beautiful, and what is deformed or defective in the various objects that we contemplate.

Like the taste of the palate, it relishes some things, is disgusted with others; with regard to many, is indifferent or dubious, and is considerably influenced by habit, by associations, and by opinion. These obvious analogies between external and internal taste, have led men, in all ages, and in all, or most polished languages, to give the name of the external sense to this power of discerning what is beautiful with pleasure, and what is ugly and faulty in its kind with disgust.

In treating of this as an intellectual power of the mind, I intend only to make some observations, first on its nature, and then on its objects.

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1st, In the external sense of taste, we are led by reason and reflection to distinguish between the agreeable sensation we feel, and the quality in the object which occasions it. Both have the same name, and on that account are apt to be confounded by the vulgar, and even by philosophers. The sensation I feel when I taste any sapid body is in my mind; but there is a real quality in the body which is the cause of this sensation. These two things have the same name in language, not from any similitude in their nature, but because the one is the sign of the other, and because there is little occasion in common life to distinguish them.

This was fully explained in treating of the secondary qualities of bodies. The reason of taking notice of it now is, that the internal power of taste bears a great analogy in this respect to the external.

When a beautiful object is before us, we may distinguish the agreeable emotion it produces in us, from the quality of the object which causes that emotion. When I hear an air in music that pleases me, I say, it is fine, it is excellent. This excellence is not in me; it is in the music. But the pleasure it gives is not in the music; it is in me. Perhaps I cannot say what it is in the tune that pleases my ear, as I cannot say what it is in a sapid body that pleases my palate; but there is a quality in the sapid body which pleases my palate, and I call it a delicious taste; and there is a quality in the tune that pleases my taste, and I call it a fine, or an excellent air.

This ought the rather to be observed, because it is become a fashion among modern philosophers, to resolve all our perceptions into mere feelings or sensations in the person that perceives, without any thing corresponding to those feelings in the external object. According to those philosophers, there is no heat in the fire, no taste in a sapid body; the taste and the heat being only in the person that feels them. In like manner,

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there is no beauty in any object whatsoever; it is only a sensation or feeling in the person that perceives it.

The language and the common sense of mankind contradict this theory. Even those who hold it, find themselves obliged to use a language that contradicts it. I had occasion to show, that there is no solid foundation for it when applied to the secondary qualities of body; and the same arguments shew equally, that it has no solid foundation when applied to the beauty of objects, or to any of those qualities that are perceived by a good taste.

But though some of the qualities that please a good taste resemble the secondary qualities of body, and therefore may be called occult qualities, as we only feel their effect, and have no more knowledge of the cause, but that it is something which is adapted by nature to produce that effect; this is not always the case.

Our judgment of beauty is in many cases more enlightened. A work of art may appear beautiful to the most ignorant, even to a child. It pleases, but he knows not why. To one who understands it perfectly, and perceives how every part is fitted with exact judgment to its end, the beauty is not mysterious; it is perfectly comprehended; and he knows wherein it consists, as well as how it affects him.

2dly, We may observe, that, though all the tastes we perceive by the palate are either agreeable or disagreeable, or indifferent; yet, among those that are agreeable, there is great diversity, not in degree only, but in kind. And as we have not generical names for all the different kinds of taste, we distinguish them by the bodies in which they are found.

In like manner, all the objects of our internal taste are either beautiful, or disagreeable, or indifferent; yet of beauty there is a great diversity, not only of degree, but of kind: the beauty of a demonstration,

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the beauty of a poem, the beauty of a palace, the beauty of a piece of music, the beauty of a fine woman, and many more that might be named, are different kinds of beauty; and we have no names to distinguish them but the names of the different objects to which they belong.

As there is such diversity in the kinds of beauty as well as in the degrees, we need not think it strange that philosophers have gone into different systems in analyzing it, and enumerating its simple ingredients. They have made many just observations on the subject; but, from the love of simplicity, have reduced it to fewer principles than the nature of the thing will permit, having had in their eye some particular kinds of beauty, while they overlooked others.

There are moral beauties as well as natural; beauties in the objects of sense, and in intellectual objects; in the works of men, and in the works of God; in things inanimate, in brute animals, and in rational beings; in the constitution of the body of man, and in the constitution of his mind. There is no real excellence which has not its beauty to a discerning eye, when placed in a proper point of view; and it as difficult to enumerate the ingredients of beauty as the ingredients of real excellence.

3dly, The taste of the palate may be accounted most just and perfect, when we relish the things that are fit for the nourishment of the body, and are disgusted with things of a contrary nature. The manifest intention of nature in giving us this sense, is, that we may discern what it is fit for us to eat and to drink, and what it is not. Brute animals are directed in the choice of their food merely by their taste. Led by this guide, they choose the food that nature intended for them, and seldom make mistakes, unless they be pinched by hunger, or deceived by artificial composi-

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tions. In infants, likewise, the taste is commonly sound and uncorrupted, and of the simple productions of nature they relish the things that are most wholesome.

In like manner, our internal taste ought to be accounted most just and perfect, when we are pleased with things that are most excellent in their kind, and displeased with the contrary. The intention of nature is no less evident in this internal taste than in the external. Every excellence has a real beauty and charm that makes it an agreeable object to those who have the faculty of discerning its beauty; and this faculty is what we call a good taste.

A man, who, by any disorder in his mental powers, or by bad habits, has contracted a relish for what has no real excellence, or what is deformed and defective, has a depraved taste, like one who finds a more agreeable relish in ashes or cinders, than in the most wholesome food. As we must acknowledge the taste of the palate to be depraved in this case, there is the same reason to think the taste of the mind depraved in the other.

There is therefore a just and rational taste, and there is a depraved and corrupted taste. For it is too evident, that, by bad education, bad habits, and wrong associations, men may acquire a relish for nastiness, for rudeness, and ill breeding, and for many other deformities. To say that such a taste is not vitiated, is no less absurd than to say, that the sickly girl who delights in eating charcoal and tobacco pipes, has as just and natural a taste as when she is in perfect health.

4thly, The force of custom, of fancy, and of casual associations, is very great both upon the external and internal taste. An Esquimaux can regale himself with a draught of whale oil, and a Canadian can feast

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upon a dog. A Kamtschadale lives upon putrid fish, and is sometimes reduced to eat the bark of trees. The taste of rum, or of green tea, is at first as nauseous as that of ipecacuanha, to some persons, who may be brought by use to relish what they once found so disagreeable.

When we see such varieties in the taste of the palate produced by custom and associations, and some perhaps by constitution, we may be the less surprised that the same causes should produce like varieties in the taste of beauty; that the African should esteem thick lips and a flat nose; that other nations should draw out their ears, till they hang over their shoulders; that in one nation ladies should paint their faces, and in another should make them shine with grease.

5thly, Those who conceive that there is no standard in nature by which taste may be regulated, and that the common proverb, *That there ought to be no dispute about taste*, is to be taken in the utmost latitude, go upon slender and insufficient ground. The same arguments might be used with equal force against any standard of truth.

Whole nations by the force of prejudice are brought to believe the grossest absurdities; and why should it be thought that the taste is less capable of being perverted than the judgment? It must indeed be acknowledged, that men differ more in the faculty of taste than in what we commonly call judgment; and therefore it may be expected that they should be more liable to have their taste corrupted in matters of beauty and deformity, than their judgment in matters of truth and error.

If we make due allowance for this, we shall see that it is as easy to account for the variety of tastes, though there be in nature a standard of true beauty, and con-

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sequently of good taste; as it is to account for the variety and contrariety of opinions, though there be in nature a standard of truth, and consequently of right judgment.

6thly, Nay, if we speak accurately and strictly, we shall find, that in every operation of taste, there is judgment implied.

When a man pronounces a poem or a palace to be beautiful, he affirms something of that poem or that palace; and every affirmation or denial expresses judgment. For we cannot better define judgment, than by saying that it is an affirmation or denial of one thing concerning another. I had occasion to show, when treating of judgment, that it is implied in every perception of our external senses. There is an immediate conviction and belief of the existence of the quality perceived, whether it be colour, or sound, or figure; and the same thing holds in the perception of beauty or deformity.

If it be said that the perception of beauty is merely a feeling in the mind that perceives, without any belief of excellence in the object, the necessary consequence of this opinion is, that when I say Virgil's Georgics is a beautiful poem, I mean not to say any thing of the poem, but only something concerning myself and my feelings. Why should I use a language that expresses the contrary of what I mean?

My language, according to the necessary rules of construction can bear no other meaning but this, that there is something in the poem, and not in me, which I call beauty. Even those who hold beauty to be merely a feeling in the person that perceives it, find themselves under a necessity of expressing themselves, as if beauty were solely a quality of the object, and not of the percipient.

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No reason can be given why all mankind should express themselves thus, but that they believe what they say. It is therefore contrary to the universal sense of mankind, expressed by their language, that beauty is not really in the object, but is merely a feeling in the person who is said to perceive it. Philosophers should be very cautious in opposing the common sense of mankind; for, when they do, they rarely miss going wrong.

Our judgment of beauty is not indeed a dry and unaffecting judgment, like that of a mathematical or metaphysical truth. By the constitution of our nature, it is accompanied with an agreeable feeling or emotion, for which we have no other name but the sense of beauty. This sense of beauty, like the perceptions of our other senses, implies not only a feeling, but an opinion of some quality in the object which occasions that feeling.

In objects that please the taste, we always judge that there is some real excellence, some superiority to those that do not please. In some cases, that superior excellence is distinctly perceived, and can be pointed out; in other cases, we have only a general notion of some excellence which we cannot describe. Beauties of the former kind may be compared to the primary qualities perceived by the external senses; those of the latter kind, to the secondary.

7thly, Beauty or deformity in an object, results from its nature or structure. To perceive the beauty therefore, we must perceive the nature or structure from which it results. In this the internal sense differs from the external. Our external senses may discover qualities which do not depend upon any antecedent perception. Thus I can hear the sound of a bell, though I never perceived any thing else belonging to it. But it is impossible to perceive the beauty of an object,

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without perceiving the object, or at least conceiving it. On this account, Dr. Hutcheson called the senses of beauty and harmony reflex or secondary senses; because the beauty cannot be perceived unless the object be perceived by some other power of the mind. Thus the sense of harmony and melody in sounds supposes the external sense of hearing, and is a kind of secondary to it. A man born deaf may be a good judge of beauties of another kind, but can have no notion of melody or harmony. The like may be said of beauties in colouring and in figure, which can never be perceived without the senses, by which colour and figure are perceived.

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CHAP. II.

OF THE OBJECTS OF TASTE; AND FIRST, OF NOVELTY.

A PHILOSOPHICAL analysis of the objects of taste is like applying the anatomical knife to a fine face. The design of the philosopher, as well as of the anatomist, is not to gratify taste, but to improve knowledge. The reader ought to be aware of this, that he may not entertain an expectation in which he will be disappointed.

By the objects of taste, I mean those qualities or attributes of things, which are by nature adapted to please a good taste. Mr. Addison, and Dr. Akenside after him, have reduced them to three; to wit, novelty, grandeur, and beauty. This division is sufficient for all I intend to say upon the subject, and therefore I shall adopt it; observing only, that beauty is often taken in so extensive a sense as to comprehend all the objects of taste; yet all the authors I have met with, who have given a division of the objects of taste, make beauty one species.

I take the reason of this to be, that we have specific names for some of the qualities that please the taste, but not for all; and therefore all those fall under the general name of beauty, for which there is no specific name in the division.

There are, indeed, so many species of beauty, that it would be as difficult to enumerate them perfectly, as to enumerate all the tastes we perceive by the palate. Nor does there appear to me sufficient reason for making, as some very ingenious authors have done, as many different internal senses as there are different species of beauty or deformity.

The division of our external senses is taken from the organs of perception, and not from the qualities

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perceived. We have not the same means of dividing the internal; because, though some kinds of beauty belong only to objects of the eye, and others to objects of the ear, there are many which we cannot refer to any bodily organ; and therefore I conceive every division that has been made of our internal senses to be in some degree arbitrary. They may be made more or fewer, according as we have distinct names for the various kinds of beauty and deformity; and I suspect the most copious languages have not names for them all.

Novelty is not properly a quality of the thing to which we attribute it, far less is it a sensation in the mind to which it is new; it is a relation which the thing has to the knowledge of the person. What is new to one man, may not be so to another; what is new this moment, may be familiar to the same person some time hence. When an object is first brought to our knowledge, it is new, whether it be agreeable or not.

It is evident, therefore, with regard to novelty, whatever may be said of other objects of taste, that it is not merely a sensation in the mind of him to whom the thing is new; it is a real relation which the thing has to his knowledge at that time.

But we are so constituted, that what is new to us, commonly gives pleasure upon that account, if it be not in itself disagreeable. It rouses our attention, and occasions an agreeable exertion of our faculties.

The pleasure we receive from novelty in objects has so great influence in human life, that it well deserves the attention of philosophers; and several ingenious authors, particularly, Dr. Gerard in his Essay on taste, have, I think, successfully accounted for it, from the principles of the human constitution.

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We can perhaps conceive a being so made, that his happiness consists in a continuance of the same unvaried sensations or feelings, without any active exertion on his part. Whether this be possible or not, it is evident that man is not such a being; his good consists in the vigorous exertion of his active and intellective powers upon their proper objects; he is made for action and progress, and cannot be happy without it; his enjoyments seem to be given by Nature, not so much for their own sake, as to encourage the exercise of his various powers. That tranquillity of soul in which some place human happiness, is not a dead rest, but a regular progressive motion.

Such is the constitution of man by the appointment of Nature. This constitution is perhaps a part of the imperfection of our nature; but it is wisely adapted to our state, which is not intended to be stationary, but progressive. The eye is not satiated with seeing, nor the ear with hearing; something is always wanted. Desire and hope never cease, but remain to spur us on to something yet to be acquired; and, if they could cease, human happiness must end with them. That our desire and hope be properly directed, is our part; that they can never be extinguished, is the work of Nature.

It is this that makes human life so busy a scene. Man must be doing something, good or bad, trifling or important; and he must vary the employment of his faculties, or their exercise will become languid, and the pleasure that attends it sicken of course.

The notions of enjoyment, and of activity, considered abstractly, are no doubt very different, and we cannot perceive a necessary connection between them. But, in our constitution, they are so connected by the wisdom of Nature, that they must go hand in hand; and the first must be led and supported by the last.

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An object at first, perhaps, gave much pleasure, while attention was directed to it with vigour. But attention cannot be long confined to one unvaried object, nor can it be carried round in the same narrow circle. Curiosity is a capital principle in the human constitution, and its food must be what is in some respect new. What is said of the Athenians, may in some degree be applied to all mankind, That their time is spent in hearing, or telling, or doing some new thing.

Into this part of the human constitution, I think, we may resolve the pleasure we have from novelty in objects.

Curiosity is commonly strongest in children and in young persons, and accordingly novelty pleases them most. In all ages, in proportion as novelty gratifies curiosity, and occasions a vigorous exertion of any of our mental powers in attending to the new object, in the same proportion it gives pleasure. In advanced life, the indolent and inactive have the strongest passion for news, as a relief from a painful vacuity of thought.

But the pleasure derived from new objects, in many cases, it is not owing solely, or chiefly to their being new, but to some other circumstance that gives them value. The new fashion in dress, furniture, equipage, and other accommodations of life, gives pleasure, not so much, as I apprehend, because it is new, as because it is a sign of rank, and distinguishes a man from the vulgar.

In some things, novelty is due, and the want of it a real imperfection. Thus, if an author adds to the num- of books, with which the public is already overloaded, we expect from him something new; and if he says nothing but what has been said before in as agreeable a manner, we are justly disgusted.

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When novelty is altogether separated from the conception of worth and utility, it makes but a slight impression upon a truly correct taste. Every discovery in nature, in the arts, and in the sciences, has a real value, and gives a rational pleasure to a good taste. But things that have nothing to recommend them but novelty, are fit only to entertain children, or those who are distressed from a vacuity of thought. This quality of objects may therefore be compared to the cypher in arithmetic, which adds greatly to the value of significant figures; but, when put by itself, signifies nothing at all.

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CHAP. III.

OF GRANDEUR.

The qualities which please the taste are not more various in themselves than are the emotions and feelings with which they affect our minds.

Things new and uncommon, affect us with a pleasing surprise, which rouses and invigorates our attention to the object. But this emotion soon flags, if there is nothing but novelty to give it continuance, and leaves no effect upon the mind.

The emotion raised by grand objects is awful, solemn, and serious.

Of all objects of contemplation, the Supreme Being is the most grand. His eternity, his immensity, his irresistible power, his infinite knowledge and unerring wisdom, his inflexible justice and rectitude, his supreme government, conducting all the movements of this vast universe to the noblest ends, and in the wisest manner, are objects which fill the utmost capacity of the soul, and reach far beyond its comprehension.

The emotion which this grandest of all objects raises in the human mind, is what we call devotion; a serious recollected temper, which inspires magnanimity, and disposes to the most heroic acts of virtue.

The emotion produced by other objects which may be called grand, though in an inferior degree, is, in its nature and in its effects, similar to that of devotion. It disposes to seriousness, elevates the mind above its usual state to a kind of enthusiasm, and inspires magnanimity, and a contempt of what is mean.

Such, I conceive, is the emotion which the contemplation of grand objects raises in us. We are next to consider what this grandeur in objects is.

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To me it seems to be nothing else but such a degree of excellence, in one kind or another, as merits our admiration.

There are some attributes of mind which have a real and intrinsic excellence, compared with their contraries, and which, in every degree, are the natural objects of esteem, but, in an uncommon degree are objects of admiration. We put a value upon them because they are intrinsically valuable and excellent.

The spirit of modern philosophy would indeed lead us to think, that the worth and value we put upon things is only a sensation in our minds, and not any thing inherent in the object; and that we might have been so constituted as to put the highest value upon the things which we now despise, and to despise the qualities which we now highly esteem.

It gives me pleasure to observe, that Dr. Price, in his Review of the Questions concerning morals, strenuously opposes this opinion, as well as that which resolves moral right and wrong into a sensation in the mind of the spectator. That judicious author saw the consequences which these opinions draw after them, and has traced them to their source; to wit, the account given by Mr. Locke, and adopted by the generality of modern philosophers, of the origin of all our ideas; which account he shows to be very defective.

This proneness to resolve every thing into feelings and sensations, is an extreme into which we have been led by the desire of avoiding an opposite extreme, as common in the ancient philosophy.

At first, men are prone by nature and by habit to give all their attention to things external. Their notions of the mind, and its operations, are formed from some analogy they bear to objects of sense; and an external existence is ascribed to things which are only conceptions or feelings of the mind.

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This spirit prevailed much in the philosophy both of Plato and of Aristotle, and produced the mysterious notions of eternal and self-existent ideas, of *materia prima*, of substantial forms, and others of the like nature.

From the time of Des Cartes, philosophy took a contrary turn. That great man discovered, that many things supposed to have an external existence, were only conceptions or feelings of the mind. This track has been pursued by his successors to such an extreme, as to resolve every thing into sensations, feelings, and ideas in the mind, and to leave nothing external at all.

The Peripatetics thought, that heat and cold which we feel to be qualities of external objects. The moderns make heat and cold to be sensations only, and allow no real quality of body to be called by that name: and the same judgment they have formed with regard to all secondary qualities.

So far Des Cartes and Mr. Locke went. Their successors being put into this track of converting into feelings things that were believed to have an external existence, found that extension, solidity, figure, and all the primary qualities of body, are sensations or feelings of the mind; and that the material world is a phenomenon only, and has no existence but in our mind.

It was then a very natural progress to conceive, that beauty, harmony, and grandeur, the objects of taste, as well as right and wrong, the objects of the moral faculty, are nothing but feelings of the mind.

Those who are acquainted with the writings of modern philosophers, can easily trace this doctrine of feelings from Des Cartes down to Mr. Hume, who put the finishing stroke to it, by making truth and error to be feelings of the mind, and belief to be an operation of the sensitive part of our nature.

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To return to our subject: If we hearken to the dictates of common sense, we must be convinced that there is real excellence in some things, whatever our feelings or our constitution be.

It depends no doubt upon our constitution, whether we do, or do not perceive excellence where it really is: but the object has its excellence from its own constitution, and not from ours.

The common judgment of mankind in this matter sufficiently appears in the language of all nations, which uniformly ascribes excellence, grandeur, and beauty to the object, and not to the mind that perceives it. And I believe in this, as in most other things, we shall find the common judgment of mankind and true philosophy not to be at variance.

Is not power in its nature more excellent than weakness; knowledge than ignorance; wisdom than folly; fortitude than pusillanimity?

Is there no intrinsic excellence in self-command, in generosity, in public spirit? Is not friendship a better affection of mind than hatred; a noble emulation, than envy?

Let us suppose, if possible, a being so constituted, as to have a high respect for ignorance, weakness, and folly; to venerate cowardice, malice, and envy, and to hold the contrary qualities in contempt; to have an esteem for lying and falsehood, and to love most those who imposed upon him, and used him worst. Could we believe such a constitution to be any thing else than madness and delirium? It is impossible. We can as easily conceive a constitution, by which one should perceive two and three to make fifteen, or a part to be greater than the whole.

Every one who attends to the operations of his own mind will find it to be certainly true, as it is the com-

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mon belief of mankind, that esteem is led by opinion, and that every person draws our esteem, as far only as he appears either to reason or fancy to be amiable and worthy.

There is therefore a real intrinsic excellence in some qualities of mind, as in power, knowledge, wisdom, virtue, magnanimity. These, in every degree, merit esteem; but in an uncommon degree, they merit admiration; and that which merits admiration, we call grand.

In the contemplation of uncommon excellence, the mind feels a noble enthusiasm, which disposes it to the imitation of what it admires.

When we contemplate the character of Cato, his greatness of soul, his superiority to pleasure, to toil, and to danger, his ardent zeal for the liberty of his country; when we see him standing unmoved in misfortunes, the last pillar of the liberty of Rome, and falling nobly in his country's ruin, who would not wish to be Cato rather than Cæsar in all his triumph?

Such a spectacle of a great soul struggling with misfortune, Seneca thought not unworthy of the attention of Jupiter himself, "Ecce spectaculum Deo dignum, ad quod respiciat Jupiter suo operi intentus vir fortis cum mala fortuna compositus."

As the Deity is of all objects of thought the most grand, the descriptions given in holy writ of his attributes and works, even when clothed in simple expression, are acknowledged to be sublime. The expression of Moses, "And God said, let there be light, and there was light," has not escaped the notice of Longinus, a heathen critic, as an example of the sublime.

What we call sublime in description, or in speech of any kind, is a proper expression of the admiration

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and enthusiasm which the subject produces in the mind of the speaker. If this admiration and enthusiasm appears to be just, it carries the hearer along with it involuntarily, and by a kind of violence rather than by cool conviction: for no passions are so infectious as those which hold of enthusiasm.

But, on the other hand, if the passion of the speaker appears to be in no degree justified by the subject or the occasion, it produces in the judicious hearer no other emotion but ridicule and contempt.

The true sublime cannot be produced solely by art in the composition; it must take its rise from grandeur in the subject, and a corresponding emotion raised in the mind of the speaker. A proper exhibition of these, though it should be artless, is irresistible, like fire thrown into the midst of combustible matter.

When we contemplate the earth, the sea, the planetary system, the universe, these are vast objects; it requires a stretch of imagination to grasp them in our minds. But they appear truly grand, and merit the highest admiration, when we consider them as the work of God, who, in the simple style of Scripture, stretched out the heavens, and laid the foundation of the earth; or, in the poetical language of Milton,

> In his hand
> He took the golden compasses, prepar'd,
> In God's eternal store, to circumscribe
> This universe, and all created things.
> One foot he center'd, and the other turn'd
> Round thro' the vast profundity obscure;
> And said, thus far extend, thus far thy bounds;
> This be thy just circumference, O world.

When we contemplate the world of Epicurus, and conceive the universe to be a fortuitous jumble of atoms, there is nothing grand in this idea. The clashing of atoms by blind chance has nothing in it fit to raise our

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conceptions, or to elevate the mind. But the regular structure of a vast system of beings produced by creating power, and governed by the best laws which perfect wisdom and goodness could contrive, is a spectacle which elevates the understanding, and fills the soul with devout admiration.

A great work is a work of great power, great wisdom, and great goodness, well contrived for some important end. But power, wisdom, and goodness, are properly the attributes of mind only: they are ascribed to the work figuratively, but are really inherent in the author: and, by the same figure, the grandeur is ascribed to the work, but is properly inherent in the mind that made it.

Some figures of speech are so natural and so common in all languages, that we are led to think them literal and proper expressions. Thus an action is called brave, virtuous, generous; but it is evident, that valour, virtue, generosity, are the attributes of persons only, and not of actions. In the action considered abstractly, there is neither valour, nor virtue, nor generosity. The same action done from a different motive may deserve none of those epithets. The change in this case is not in the action, but in the agent; yet, in all languages, generosity and other moral qualities are ascribed to actions. By a figure, we assign to the effect a quality which is inherent only in the cause.

By the same figure, we ascribe to a work that grandeur which properly is inherent in the mind of the author.

When we consider the Iliad as the work of the poet, its sublimity was really in the mind of Homer. He conceived great characters, great actions, and great events in a manner suitable to their nature, and with those emotions which they are naturally fitted to produce; and he conveys his conceptions and his emotions

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by the most proper signs. The grandeur of his thoughts is reflected to our eye by his work, and therefore it is justly called a grand work.

When we consider the things presented to our mind in the Iliad, without regard to the poet, the grandeur is properly in Hector and Achilles, and the other great personages, human and divine, brought upon the stage.

Next to the Deity and his works, we admire great talents and heroic virtue in men, whether represented in history or in fiction. The virtues of Cato, Aristides, Socrates, Marcus Aurelius, are truly grand. Extraordinary talents and genius, whether in poets, orators, philosophers, or lawgivers, are objects of admiration, and therefore grand. We find writers of taste seized with a kind of enthusiasm in the description of such personages.

What a grand idea does Virgil give of the power of eloquence, when he compares the tempest of the sea, suddenly calmed by the command of Neptune, to a furious sedition in a great city, quelled at once by a man of authority and eloquence.

> Sic ait, ac dicto citius tumida æquora placat:
> Ac veluti magno in populo, si forte coorta est
> Seditio, sævitque animis ignobile vulgus;
> Jamque faces et saxa volant, furor arma ministrat;
> Tum pietate gravem, et meritis, si forte virum quem
> Conspexere, silent, arrectisque auribus adstant.
> Ille regit dictis animos, et pectora mulcet.
> Sic cunctus pelagi cecidit fragor.

The wonderful genius of sir Isaac Newton, and his sagacity in discovering the laws of nature, is admirably expressed in that short but sublime epitaph by Pope:

> Nature and nature's laws lay hid in night;
> God said, Let Newton be, and all was light.

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Hitherto we have found grandeur only in qualities of mind; but it may be asked, Is there no real grandeur in material objects?

It will perhaps appear extravagant to deny that there is; yet it deserves to be considered, whether all the grandeur we ascribe to objects of sense be not derived from something intellectual, of which they are the effects or signs, or to which they bear some relation or analogy.

Besides the relations of effect and cause, of sign and thing signified, there are innumerable similitudes and analogies between things of very different nature, which lead us to connect them in our imagination, and to ascribe to the one what properly belongs to the other.

Every metaphor in language is an instance of this; and it must be remembered, that a very great part of language, which we now account proper, was originally metaphorical; for the metaphorical meaning becomes the proper as soon as it becomes the most usual; much more when that which was at first the proper meaning falls into disuse.

The poverty of language, no doubt, contributes in part to the use of metaphor; and therefore we find the most barren and uncultivated languages the most metaphorical. But the most copious language may be called barren, compared with the fertility of human conceptions, and can never, without the use of figures, keep pace with the variety of their delicate modifications.

But another cause of the use of metaphor is, that we find pleasure in discovering relations, similitudes, analogies, and even contrasts that are not obvious to every eye. All figurative speech presents something of this kind; and the beauty of poetical language seems to be derived in a great measure from this source.

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Of all figurative language, that is the most common, the most natural, and the most agreeable, which either gives a body, if we may so speak, to things intellectual, and clothes them with visible qualities; or which, on the other hand, gives intellectual qualities to the objects of sense.

To beings of more exalted faculties, intellectual objects may perhaps appear to most advantage in their naked simplicity. But we can hardly conceive them but by means of some analogy they bear to the objects of sense. The names we give them are almost all metaphorical or analogical.

Thus the names of grand and sublime, as well as their opposites, mean and low, are evidently borrowed from the dimensions of body; yet it must be acknowledged, that many things are truly grand and sublime, to which we cannot ascribe the dimensions of height and extension.

Some analogy there is, without doubt, between greatness of dimension, which is an object of external sense, and that grandeur, which is an object of taste. On account of this analogy, the last borrows its name from the first; and the name being common, leads us to conceive that there is something common in the nature of the things.

But we shall find many qualities of mind, denoted by names taken from some quality of body to which they have some analogy, without any thing common in their nature.

Sweetness and austerity, simplicity and duplicity, rectitude and crookedness, are names common to certain qualities of mind, and to qualities of body to which they have some analogy; yet he would err greatly who ascribed to a body that sweetness or that simplicity which are the qualities of mind. In like manner, greatness and meanness are names common

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to qualities perceived by the external sense, and to qualities perceived by taste; yet he may be in an error, who ascribes to the objects of sense that greatness or that meanness, which is only an object of taste.

As intellectual objects are made more level to our apprehension by giving them a visible form; so the objects of sense are dignified and made more august, by ascribing to them intellectual qualities which have some analogy to those they really possess. The sea rages, the sky lowers, the meadows smile, the rivulets murmur, the breezes whisper, the soil is grateful or ungrateful; such expressions are so familiar in common language, that they are scarcely accounted poetical or figurative; but they give a kind of dignity to inanimate objects, and make our conception of them more agreeable.

When we consider matter as an inert, extended, divisible, and moveable substance, there seems to be nothing in these qualities which we can call grand; and when we ascribe grandeur to any portion of matter, however modified, may it not borrow this quality from something intellectual, of which it is the effect, or sign, or instrument, or to which it bears some analogy; or, perhaps, because it produces in the mind an emotion that has some resemblance to that admiration which truly grand objects raise?

A very elegant writer on the sublime and beautiful, makes every thing grand or sublime that is terrible. Might he not be led to this by the similarity between dread and admiration? Both are grave and solemn passions; both make a strong impression upon the mind: and both are very infectious. But they differ specifically, in this respect, that admiration supposes some uncommon excellence in its object, which dread does not. We may admire what we see no reason to dread; and we may dread what we do not admire. In

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dread, there is nothing of that enthusiasm which naturally accompanies admiration, and is a chief ingredient of the emotion raised by what is truly grand or sublime.

Upon the whole, I humbly apprehend, that true grandeur is such a degree of excellence as is fit to raise an enthusiastical admiration; that this grandeur is found originally and properly in qualities of mind; that it is discerned in objects of sense only by reflection, as the light we perceive in the moon and planets is truly the light of the sun; and that those who look for grandeur in mere matter, seek the living among the dead.

If this be a mistake, it ought at least to be granted, that the grandeur which we perceive in qualities of mind, ought to have a different name from that which belongs properly to the objects of sense, as they are very different in their nature, and produce very different emotions in the mind of the spectator.

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CHAPTER IV.

OF BEAUTY.

Beauty is found in things, so various, and so very different in nature, that it is difficult to say wherein it consists, or what there can be common to all the objects in which it is found.

Of the objects of sense, we find beauty, in colour, in sound, in form, in motion. There are beauties of speech, and beauties of thought; beauties in the arts, and in the sciences; beauties in actions, in affections, and in characters.

In things so different, and so unlike, is there any quality, the same in all, which we may call by the name of beauty? What can it be that is common to the thought of a mind, and the form of a piece of matter, to an abstract theorem, and a stroke of wit?

I am indeed unable to conceive any quality in all the different things that are called beautiful, that is the same in them all. There seems to be no identity, nor even similarity, between the beauty of a theorem and the beauty of a piece of music, though both may be beautiful. The kinds of beauty seem to be as various as the objects to which it is ascribed.

But why should things so different be called by the same name? This cannot be without a reason. If there be nothing common in the things themselves, they must have some common relation to us, or to something else, which leads us to give them the same name.

All the objects we call beautiful agree in two things, which seem to concur in our sense of beauty. 1st, When they are perceived, or even imagined, they produce a certain agreeable emotion or feeling in the mind; and 2dly, this agreeable emotion is accompanied

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with an opinion or belief of their having some perfection or excellence belonging to them.

Whether the pleasure we feel in contemplating beautiful objects may have any necessary connection with the belief of their excellence, or whether that pleasure be conjoined with this belief, by the good pleasure only of our Maker, I will not determine. The reader may see Dr. Price's sentiments upon this subject, which merit consideration, in the second chapter of his Review of the Questions concerning morals.

Though we may be able to conceive these two ingredients of our sense of beauty disjoined, this affords no evidence that they have no necessary connection. It has indeed been maintained, that whatever we can conceive, is possible: but I endeavoured, in treating of conception, to show, that this opinion, though very common, is a mistake. There may be, and probably are, many necessary connections of things in nature, which we are too dim sighted to discover.

The emotion produced by beautiful objects is gay and pleasant. It sweetens and humanizes the temper, is friendly to every benevolent affection, and tends to allay sullen and angry passions. It enlivens the mind, and disposes it to other agreeable emotions, such as those of love, hope, and joy. It gives a value to the object, abstracted from its utility.

In things that may be possessed as property, beauty greatly enhances the price. A beautiful dog or horse, a beautiful coach or house, a beautiful picture or prospect, is valued by its owner and by others, not only for its utility, but for its beauty.

If the beautiful object be a person, his company and conversation are, on that account, the more agreeable, and we are disposed to love and esteem him. Even in a perfect stranger, it is a powerful recommendation,

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and disposes us to favour and think well of him, if of our own sex, and still more if of the other.

"There is nothing," says Mr. Addison, "that makes its way more directly to the soul than beauty, which, immediately diffuses a secret satisfaction and complacence through the imagination, and gives a finishing to any thing that is great and uncommon. The very first discovery of it strikes the mind with an inward joy, and spreads a cheerfulness and delight through all its faculties."

As we ascribe beauty, not only to persons, but to inanimate things, we give the name of love or liking to the emotion, which beauty, in both these kinds of objects, produces. It is evident, however, that liking to a person is a very different affection of mind from liking to an inanimate thing. The first always implies benevolence; but what is inanimate cannot be the object of benevolence. The two affections, however different, have a resemblance in some respects; and, on account of that resemblance, have the same name: and perhaps beauty, in these two different kinds of objects, though it has one name, may be as different in its nature as the emotions which it produces in us.

Besides the agreeable emotion which beautiful objects produce in the mind of the spectator, they produce also an opinion or judgment of some perfection or excellence in the object. This I take to be a second ingredient in our sense of beauty, though it seems not to be admitted by modern philosophers.

The ingenious Dr. Hutcheson, who perceived some of the defects of Mr. Locke's system, and made very important improvements upon it, seems to have been carried away by it, in his notion of beauty. In his inquiry concerning beauty, sect. 1. "Let it be observed," says he, "that, in the following papers, the word *beauty* is taken for the idea raised in us, and the sense of beauty, for our power of receiving that idea." And

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again; "Only let it be observed, that, by absolute or original beauty, is not understood any quality supposed to be in the object which should, of itself, be beautiful, without relation to any mind which perceives it: for beauty, like other names of sensible ideas, properly denotes the perception of some mind; so cold, hot, sweet, bitter, denote the sensations in our minds, to which perhaps there is no resemblance in the objects which excite these ideas in us; however, we generally imagine otherwise. Were there no mind, with a sense of beauty, to contemplate objects, I see not how they could be called beautiful."

There is no doubt an analogy between the external senses of touch and taste, and the internal sense of beauty. This analogy led Dr. Hutcheson, and other modern philosophers, to apply to beauty, what Des Cartes and Locke had taught concerning the secondary qualities, perceived by the external senses.

Mr. Locke's doctrine concerning the secondary qualities of body, is not so much an error in judgment, as an abuse of words. He distinguished very properly between the sensations we have of heat and cold, and that quality or structure in the body which is adapted by nature to produce these sensations in us. He observed very justly, that there can be no similitude between one of these and the other. They have the relation of an effect to its cause, but no similitude. This was a very just and proper correction of the doctrine of the Peripatetics, who taught, that all our sensations are the very form and image of the quality in the object by which they are produced.

What remained to be determined was, whether the words, heat and cold, in common language, signify the sensations we feel, or the qualities of the object which are the cause of these sensations. Mr. Locke made heat and cold to signify only the sensations we feel, and

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not the qualities which are the cause of them. And in this, I apprehend, lay his mistake. For it is evident, from the use of language, that hot and cold, sweet and bitter, are attributes of external objects, and not of the person who perceives them. Hence it appears a monstrous paradox to say, there is no heat in the fire, no sweetness in sugar: but when explained according to Mr. Locke's meaning, it is only, like most other paradoxes, an abuse of words.

The sense of beauty may be analyzed in a manner very similar to the sense of sweetness. It is an agreeable feeling or emotion, accompanied with an opinion or judgment of some excellence in the object, which is fitted by nature to produce that feeling.

The feeling is, no doubt, in the mind, and so also is the judgment we form of the object: but this judgment, like all others, must be true or false. If it be a true judgment, there is some real excellence in the object. And the use of all languages shows, that the name of beauty belongs to this excellence of the object, and not to the feelings of the spectator.

To say that there is in reality no beauty in those objects in which all men perceive beauty, is to attribute to man fallacious senses. But we have no ground to think so disrespectfully of the Author of our being; the faculties he has given us are not fallacious; nor is that beauty, which he has so liberally diffused over all the works of his hands, a mere fancy in us, but a real excellence in his works, which express the perfection of their Divine Author.

We have reason to believe, not only that the beauties we see in nature are real, and not fanciful, but that there are thousands which our faculties are too dull to perceive. We see many beauties, both of human and divine art, which the brute animals are incapable of perceiving; and superior beings may excel us

as far in their discernment of true beauty as we excel the brutes.

The man who is skilled in painting or statuary, sees more of the beauty of a fine picture or statue, than a common spectator. The same thing holds in all the fine arts. The most perfect works of art have a beauty that strikes even the rude and ignorant; but they see only a small part of that beauty which is seen in such works by those who understand them perfectly and can produce them.

This may be applied with no less justice to the works of nature. They have a beauty that strikes even the ignorant and inattentive. But the more we discover of their structure, of their mutual relations, and of the laws by which they are governed, the greater beauty, and the more delightful marks of art, wisdom, and goodness we discern.

Thus the expert anatomist sees numberless beautiful contrivances in the structure of the human body, which are unknown to the ignorant.

Although the vulgar eye sees much beauty in the face of the heavens, and in the various motions and changes of the heavenly bodies, the expert astronomer, who knows their order and distances, their periods, the orbits they describe in the vast regions of space, and the simple and beautiful laws by which their motions are governed, and all the appearances of their stations, progressions, and retrogradations, their eclipses, occultations, and transits are produced, sees a beauty, order, and harmony reign through the whole planetary system, which delights the mind. The eclipses of the sun and moon, and the blazing tails of comets, which strike terror into barbarous nations, furnish the most pleasing entertainment to his eye, and a feast to his understanding.

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In every part of nature's works, there are numberless beauties, which, on account of our ignorance, we are unable to perceive. Superior beings may see more than we; but he only who made them, and, upon a review, pronounced them all to be very good, can see all their beauty.

Our determinations with regard to the beauty of objects, may, I think, be distinguished into two kinds; the first we may call instinctive, the other rational.

Some objects strike us at once, and appear beautiful at first sight, without any reflection, without our being able to say why we call them beautiful, or being able to specify any perfection which justifies our judgment. Something of this kind there seems to be in brute animals; and in children before the use of reason; nor does it end with infancy, but continues through life.

In the plumage of birds, and of butterflies, in the colours and form of flowers, of shells, and of many other objects, we perceive a beauty that delights; but cannot say what it is in the object that should produce that emotion.

The beauty of the object may in such cases be called an occult quality. We know well how it affects our senses; but what it is in itself we know not. But this, as well as other occult qualities, is a proper subject of philosophical disquisition; and, by a careful examination of the objects to which nature has given this amiable quality, we may perhaps discover some real excellence in the object, or at least, some valuable purpose that is served by the effect which it produces upon us.

This instinctive sense of beauty, in different species of animals, may differ as much as the external sense of taste, and in each species be adapted to its manner of life. By this perhaps the various tribes are led to

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associate with their kind, to dwell among certain objects rather than others, and to construct their habitation in a particular manner.

There seem likewise to be varieties in the sense of beauty in the individuals of the same species, by which they are directed in the choice of a mate, and in the love and care of their offspring.

"We see," says Mr. Addison, "that every different species of sensible creatures has its different notions of beauty, and that each of them is most affected with the beauties of its own kind. This is no where more remarkable than in birds of the same shape and proportion, where we often see the mate determined in his courtship by the single grain or tincture of a feather, and never discovering any charms but in the colour of its own species."

"Scit thalamo servare fidem, sanctasque veretur
Connubii leges; non illum in pectore candor
Sollicitat niveus; neque pravum accendit amorem
Splendida lanugo, vel honesta in vertice crista;
Purpureusve nitor pennarum; ast agmina latè
Fœminea explorat cautus, maculasque requirit
Cognatus, paribusque interlita corpora guttis:
Ni faceret, pictis sylvam circum undique monstris
Confusam aspiceres vulgo, partusque biformes,
Et genus ambiguum, et veneris monumenta nefandæ,

"Hinc merula in nigro se oblectat nigra marito;
Hinc socium lasciva petit philomela canorum,
Agnoscitque pares sonitus; hinc noctua tetram
Canitiem alarum, et glaucos miratur ocellos.
Nempe sibi semper constat, crescitque quotannis
Lucida progenies, castos confessa parentes:
Vere novo exultat, plumasque decora juventus
Explicat ad solem, patriisque coloribus ardet."

In the human kind, there are varieties in the taste of beauty, of which we can no more assign a reason than of the variety of their features, though it is easy to perceive that very important ends are answered by

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both. These varieties are most observable in the judgments we form of the features of the other sex; and in this the intention of nature is most apparent.

As far as our determinations of the comparative beauty of objects are instinctive, they are no subject of reasoning or of criticism; they are purely the gift of nature, and we have no standard by which they may be measured.

But there are judgments of beauty that may be called rational, being grounded on some agreeable quality of the object which is distinctly conceived, and may be specified.

This distinction between a rational judgment of beauty and that which is instinctive, may be illustrated by an instance.

In a heap of pebbles, one that is remarkable for brilliancy of colour, and regularity of figure will be picked out of the heap by a child. He perceives a beauty in it, puts a value upon it, and is fond of the property of it. For this preference, no reason can be given, but that children are, by their constitution, fond of brilliant colours, and of regular figures.

Suppose again that an expert mechanic views a well constructed machine. He sees all its parts to be made of the fittest materials, and of the most proper form; nothing superfluous, nothing deficient; every part adapted to its use, and the whole fitted in the most perfect manner to the end for which it is intended. He pronounces it to be a beautiful machine. He views it with the same agreeable emotion as the child viewed the pebble; but he can give a reason for his judgment, and point out the particular perfections of the object on which it is grounded.

Although the instinctive and the rational sense of beauty may be perfectly distinguished in speculation, yet, in passing judgment upon particular objects, they

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are often so mixed and confounded, that it is difficult to assign to each its own province. Nay, it may often happen, that a judgment of the beauty of an object, which was at first merely instinctive, shall afterward become rational, when we discover some latent perfection of which that beauty in the object is a sign.

As the sense of beauty may be distinguished into instinctive and rational; so I think beauty itself may be distinguished into original and derived.

As some objects shine by their own light, and many more by light that is borrowed and reflected; so I conceive the lustre of beauty in some objects is inherent and original, and in many others, is borrowed and reflected.

There is nothing more common in the sentiments of all mankind, and in the language of all nations, than what may be called a communication of attributes; that is, transferring an attribute, from the subject to which it properly belongs, to some related or resembling subject.

The various objects which nature presents to our view, even those that are most different in kind, have innumerable similitudes, relations, and analogies, which we contemplate with pleasure, and which lead us naturally to borrow words and attributes from one object to express what belongs to another. The greatest part of every language under heaven is made up of words borrowed from one thing, and applied to something supposed to have some relation or analogy to their first signification.

The attributes of body we ascribe to mind, and the attributes of mind to material objects. To inanimate things we ascribe life, and even intellectual and moral qualities. And although the qualities that are thus made common belong to one of the subjects in the proper sense, and to the other metaphorically, these

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different senses are often so mixed in our imagination, as to produce the same sentiment with regard to both.

It is therefore natural, and agreeable to the strain of human sentiments and of human language, that in many cases the beauty which originally and properly is in the thing signified, should be transferred to the sign; that which is in the cause, to the effect; that which is in the end, to the means; and that which is in the agent, to the instrument.

If what was said in the last chapter of the distinction between the grandeur which we ascribe to qualities of mind, and that which we ascribe to material objects be well founded, this distinction of the beauty of objects will easily be admitted as perfectly analogous to it. I shall therefore only illustrate it by an example.

There is nothing in the exterior of a man more lovely and more attractive than perfect good breeding. But what is this good breeding? It consists of all the external signs of due respect to our superiors, condescension to our inferiors, politeness to all with whom we converse or have to do, joined in the fair sex with that delicacy of outward behaviour which becomes them. And how comes it to have such charms in the eyes of all mankind? For this reason only, as I apprehend, that it is a natural sign of that temper, and those affections and sentiments with regard to others, and with regard to ourselves, which are in themselves truly amiable and beautiful.

This is the original, of which good breeding is the picture; and it is the beauty of the original that is reflected to our sense by the picture. The beauty of good breeding, therefore, is not originally in the external behaviour in which it consists, but is derived from the qualities of mind which it expresses. And

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though there may be good breeding without the amiable qualities of mind, its beauty is still derived from what it naturally expresses.

Having explained these distinctions of our sense of beauty into instinctive and rational, and of beauty itself into original and derived, I would now proceed to give a general view of those qualities in objects, to which we may justly and rationally ascribe beauty, whether original or derived.

But here some embarrassment arises from the vague meaning of the word *beauty*, which I had occasion before to observe.

Sometimes it is extended, so as to include every thing that pleases a good taste, and so comprehends grandeur and novelty, as well as what in a more restricted sense is called beauty. At other times, it is even by good writers confined to the objects of sight, when they are either seen, or remembered, or imagined. Yet it is admitted by all men, that there are beauties in music; that there is beauty as well as sublimity in composition, both in verse and in prose; that there is beauty in characters, in affections, and in actions. These are not objects of sight; and a man may be a good judge of beauty of various kinds, who has not the faculty of sight.

To give a determinate meaning to a word so variously extended and restricted, I know no better way than what is suggested by the common division of the objects of taste into novelty, grandeur, and beauty. Novelty, it is plain, is no quality of the new object, but merely a relation which it has to the knowledge of the person to whom it is new. Therefore, if this general division be just, every quality in an object that pleases a good taste, must, in one degree or another, have either grandeur or beauty. It may still be difficult to fix the precise limit between grandeur and beauty; but they

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must together comprehend every thing fitted by its nature to please a good taste, that is, every real perfection and excellence in the objects we contemplate.

In a poem, in a picture, in a piece of music, it is real excellence that pleases a good taste. In a person, every perfection of the mind, moral or intellectual, and every perfection of the body, gives pleasure to the spectator as well as to the owner, when there is no envy nor malignity to destroy that pleasure.

It is therefore in the scale of perfection and real excellence that we must look for what is either grand or beautiful in objects. What is the proper object of admiration is grand, and what is the proper object of love and esteem is beautiful.

This, I think, is the only notion of beauty that corresponds with the division of the objects of taste which has been generally received by philosophers. And this connection of beauty, with real perfection, was a capital doctrine of the Socratic school. It is often ascribed to Socrates in the dialogues of Plato and of Xenophon.

We may therefore take a view, first, of those qualities of mind to which we may justly and rationally ascribe beauty, and then of the beauty we perceive in the objects of sense. We shall find, if I mistake not, that, in the first, original beauty is to be found, and that the beauties of the second class are derived from some relation they bear to mind, as the signs or expressions of some amiable mental quality, or as the effects of design, art, and wise contrivance.

As grandeur naturally produces admiration, beauty naturally produces love. We may therefore justly ascribe beauty to those qualities which are the natural objects of love and kind affection.

Of this kind chiefly are some of the moral virtues, which in a peculiar manner constitute a lovely char-

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acter. Innocence, gentleness, condescension, humanity, natural affection, public spirit, and the whole train of the soft and gentle virtues. These qualities are amiable from their very nature, and on account of their intrinsic worth.

There are other virtues that raise admiration, and are therefore grand; such as magnanimity, fortitude, self-command, superiority to pain and labour, superiority to pleasure, and to the smiles of fortune, as well as to her frowns.

These awful virtues constitute what is most grand in the human character; the gentle virtues, what is most beautiful and lovely. As they are virtues, they draw the approbation of our moral faculty; as they are becoming and amiable, they affect our sense of beauty.

Next to the amiable moral virtues, there are many intellectual talents which have an intrinsic value, and draw our love and esteem to those who possess them. Such are, knowledge, good sense, wit, humour, cheerfulness, good taste, excellence in any of the fine arts, in eloquence, in dramatic action; and we may add, excellence in every art of peace or war that is useful in society.

There are likewise talents which we refer to the body, which have an original beauty and comeliness; such as health, strength, and agility, the usual attendants of youth; skill in bodily exercises, and skill in the mechanic arts. These are real perfections of the man, as they increase his power, and render the body a fit instrument for the mind.

I apprehend, therefore, that it is in the moral and intellectual perfections of mind, and in its active powers, that beauty originally dwells; and that from this as the fountain, all the beauty which we perceive in the visible world is derived.

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This, I think, was the opinion of the ancient philosophers before named; and it has been adopted by lord Shaftesbury and Dr. Akenside among the moderns.

> "Mind, mind alone! bear witness earth and heav'n,
> The living fountains in itself contains
> Of beauteous and sublime. Here hand in hand
> Sit paramount the graces. Here enthron'd,
> Celestial Venus, with divinest airs,
> Invites the soul to never fading joy." AKENSIDE.

But neither mind, nor any of its qualities or powers, is an immediate object of perception to man. We are, indeed, immediately conscious of the operations of our own mind; and every degree of perfection in them gives the purest pleasure, with a proportional degree of self-esteem, so flattering to self-love, that the great difficulty is to keep it within just bounds, so that we may not think of ourselves above what we ought to think.

Other minds we perceive only through the medium of material objects, on which their signatures are impressed. It is through this medium that we perceive life, activity, wisdom, and every moral and intellectual quality in other beings. The signs of those qualities are immediately perceived by the senses; by them the qualities themselves are reflected to our understanding; and we are very apt to attribute to the sign, the beauty or the grandeur, which is properly and originally in the things signified.

The invisible Creator, the fountain of all perfection, has stamped upon all his works signatures of his divine wisdom, power and benignity, which are visible to all men. The works of men in science, in the arts of taste, and in the mechanical arts, bear the signatures of those qualities of mind which were employed in their production. Their external behaviour and conduct

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in life expresses the good or bad qualities of their mind.

In every species of animals, we perceive by visible signs their instincts, their appetites, their affections, their sagacity. Even in the inanimate world there are many things analogous to the qualities of mind; so that there is hardly any thing belonging to mind which may not be represented by images taken from the objects of sense; and on the other hand, every object of sense is beautified, by borrowing attire from the attributes of mind.

Thus the beauties of mind, though invisible in themselves, are perceived in the objects of sense, on which their image is impressed.

If we consider, on the other hand, the qualities in sensible objects to which we ascribe beauty, I apprehend we shall find in all of them some relation to mind, and the greatest in those that are most beautiful.

When we consider inanimate matter abstractly, as a substance endowed with the qualities of extension, solidity, divisibility, and mobility, there seems to be nothing in these qualities that affects our sense of beauty. But when we contemplate the globe which we inhabit, as fitted by its form, by its motions, and by its furniture, for the habitation and support of an infinity of various orders of living creatures, from the lowest reptile up to man, we have a glorious spectacle indeed! with which the grandest and the most beautiful structures of human art can bear no comparison.

The only perfection of dead matter is its being, by its various forms and qualities, so admirably fitted for the purposes of animal life, and chiefly that of man. It furnishes the materials of every art that tends to the support or the embellishment of human life. By the Supreme Artist, it is organized in the various tribes of the vegetable kingdom, and endowed

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with a kind of life; a work which human art cannot imitate, nor human understanding comprehend.

In the bodies and various organs of the animal tribes, there is a composition of matter still more wonderful and more mysterious, though we see it to be admirably adapted to the purposes and manner of life of every species. But in every form, unorganized, vegetable, or animal, it derives its beauty from the purposes to which it is subservient, or from the signs of wisdom, or of other mental qualities which it exhibits.

The qualities of inanimate matter, in which we perceive beauty, are, sound, colour, form, and motion; the first an object of hearing, the other three of sight; which we may consider in order.

In a single note, sounded by a very fine voice, there is a beauty which we do not perceive in the same note, sounded by a bad voice, or an imperfect instrument. I need not attempt to enumerate the perfections in a single note, which give beauty to it. Some of them have names in the science of music, and there perhaps are others which have no names. But I think it will be allowed, that every quality which gives beauty to a single note, is a sign of some perfection, either in the organ, whether it be the human voice or an instrument, or in the execution. The beauty of the sound is both the sign and the effect of this perfection; and the perfection of the cause is the only reason we can assign for the beauty of the effect.

In a composition of sounds, or a piece of music, the beauty is either in the harmony, the melody, or the expression. The beauty of expression must be derived, either from the beauty of the thing expressed, or from the art and skill employed in expressing it properly.

In harmony, the very names of concord and discord are metaphorical, and suppose some analogy between the relations of sound, to which they are figuratively

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applied, and the relations of minds and affections, which they originally and properly signify.

As far as I can judge by my ear, when two or more persons of a good voice and ear, converse together in amity and friendship, the tones of their different voices are concordant, but become discordant when they give vent to angry passions; so that, without hearing what is said, one may know by the tones of the different voices, whether they quarrel or converse amicably. This, indeed, is not so easily perceived in those who have been taught, by good breeding, to suppress angry tones of voice, even when they are angry, as in the lowest rank, who express their angry passions without any restraint.

When discord arises occasionally in conversation, but soon terminates in perfect amity, we receive more pleasure than from perfect unanimity. In like manner, in the harmony of music, discordant sounds are occasionally introduced, but it is always in order to give a relish to the most perfect concord that follows.

Whether these analogies, between the harmony of a piece of music, and harmony in the intercourse of minds, be merely fanciful, or have any real foundation in fact, I submit to those who have a nicer ear, and have applied it to observations of this kind. If they have any just foundation, as they seem to me to have, they serve to account for the metaphorical application of the names of concord and discord to the relations of sounds; to account for the pleasure we have from harmony in music; and to show, that the beauty of harmony is derived from the relation it has to agreeable affections of mind.

With regard to melody, I leave it to the adepts in the science of music, to determine whether music, composed according to the established rules of harmony and melody, can be altogether void of expression; and

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whether music that has no expression can have any beauty. To me it seems, that every strain in melody that is agreeable, is an imitation of the tones of the human voice in the expression of some sentiment or passion, or an imitation of some other object in nature; and that music, as well as poetry is an imitative art.

The sense of beauty in the colours, and in the motions of inanimate objects, is, I believe, in some cases instinctive. We see, that children and savages are pleased with brilliant colours and sprightly motions. In persons of an improved and rational taste, there are many sources from which colours and motions may derive their beauty. They, as well as the forms of objects, admit of regularity and variety. The motions produced by machinery, indicate the perfection or imperfection of the mechanism, and may be better or worse adapted to their end, and from that derive their beauty or deformity.

The colours of natural objects, are commonly signs of some good or bad quality in the object; or they may suggest to the imagination something agreeable or disagreeable.

In dress and furniture, fashion has a considerable influence on the preference we give to one colour above another.

A number of clouds of different and ever changing hue, seen on the ground of a serene azure sky at the going down of the sun, present to the eye of every man a glorious spectacle. It is hard to say, whether we should call it grand or beautiful. It is both in a high degree. Clouds towering above clouds, variously tinged, according as they approach nearer to the direct rays of the sun, enlarge our conceptions of the regions above us. They give us a view of the furniture of those regions, which, in an unclouded air, seem to be a perfect void; but are now seen to contain the stores of wind

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and rain, bound up for the present, but to be poured down upon the earth in due season. Even the simple rustic does not look upon this beautiful sky, merely as a show to please the eye, but as a happy omen of fine weather to come.

The proper arrangement of colour, and of light and shade, is one of the chief beauties of painting; but this beauty is greatest, when that arrangement gives the most distinct, the most natural, and the most agreeable image of that which the painter intended to represent.

If we consider, in the last place, the beauty of form or figure in inanimate objects, this, according to Dr. Hutcheson, results from regularity, mixed with variety. Here it ought to be observed, that regularity in all cases, expresses design and art: for nothing regular was ever the work of chance; and where regularity is joined with variety, it expresses design more strongly. Besides, it has been justly observed, that regular figures are more easily and more perfectly comprehended by the mind, than the irregular, of which we can never form an adequate conception.

Although straight lines and plain surfaces have a beauty from their regularity, they admit of no variety, and therefore are beauties of the lowest order. Curve lines and surfaces admit of infinite variety, joined with every degree of regularity; and therefore, in many cases, excel in beauty those that are straight.

But the beauty arising from regularity and variety, must always yield to that which arises from the fitness of the form for the end intended. In every thing made for an end, the form must be adapted to that end; and every thing in the form that suits the end, is a beauty; every thing that unfits it for its end, is a deformity.

The forms of a pillar, of a sword, and of a balance, are very different. Each may have great beauty; but

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that beauty is derived from the fitness of the form, and of the matter for the purpose intended.

Were we to consider the form of the earth itself, and the various furniture it contains, of the inanimate kind; its distribution into land and sea, mountains and vallies, rivers and springs of water, the variety of soils that cover its surface, and of mineral and metallic substances laid up within it, the air that surrounds it, the vicissitudes of day and night, and of the seasons; the beauty of all these, which indeed is superlative, consists in this, that they bear the most lively and striking impression of the wisdom and goodness of their Author, in contriving them so admirably for the use of man, and of their other inhabitants.

The beauties of the vegetable kingdom are far superior to those of inanimate matter, in any form which human art can give it. Hence, in all ages, men have been fond to adorn their persons and their habitations with the vegetable productions of nature.

The beauties of the field, of the forest, and of the flower garden, strike a child long before he can reason. He is delighted with what he sees; but he knows not why. This is instinct, but it is not confined to childhood; it continues through all the stages of life. It leads the florist, the botanist, the philosopher, to examine and compare the objects which nature, by this powerful instinct, recommends to his attention. By degrees, he becomes a critic in beauties of this kind, and can give a reason why he prefers one to another. In every species, he sees the greatest beauty in the plants or flowers that are most perfect in their kind, which have neither suffered from unkindly soil, nor inclement weather; which have not been robbed of their nourishment by other plants, nor hurt by any accident. When he examines the internal structure of those productions of nature, and traces them from their

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embryo state in the seed to their maturity, he sees a thousand beautiful contrivances of nature, which feast his understanding more than their external form delighted his eye.

Thus, every beauty in the vegetable creation, of which he has formed any rational judgment, expresses some perfection in the object, or some wise contrivance in its Author.

In the animal kingdom, we perceive still greater beauties than in the vegetable. Here we observe life, and sense, and activity, various instincts and affections, and, in many cases, great sagacity. These are attributes of mind, and have an original beauty.

As we allow to brute animals a thinking principle or mind, though far inferior to that which is in man; and as, in many of their intellectual and active powers, they very much resemble the human species, their actions, their motions, and even their looks, derive a beauty from the powers of thought which they express.

There is a wonderful variety in their manner of life; and we find the powers they possess, their outward form, and their inward structure, exactly adapted to it. In every species, the more perfectly any individual is fitted for its end and manner of life, the greater is its beauty.

In a racehorse, every thing that expresses agility, ardour, and emulation, gives beauty to the animal. In a pointer, acuteness of scent, eagerness on the game, and tractableness, are the beauties of the species. A sheep derives its beauty from the fineness and quantity of its fleece; and in the wild animals, every beauty is a sign of their perfection in their kind.

It is an observation of the celebrated Linnæus, that, in the vegetable kingdom, the poisonous plants have commonly a lurid and disagreeable appearance to the eye, of which he gives many instances. I apprehend

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the observation may be extended to the animal kingdom, in which we commonly see something shocking to the eye in the noxious and poisonous animals.

The beauties which anatomists and physiologists describe in the internal structure of the various tribes of animals; in the organs of sense, of nutrition, and of motion, are expressive of wise design and contrivance, in fitting them for the various kinds of life, for which they are intended.

Thus, I think, it appears, that the beauty which we perceive in the inferior animals, is expressive, either of such perfections as their several natures may receive, or expressive of wise design in him who made them, and that their beauty is derived from the perfections which it expresses.

But of all the objects of sense, the most striking and attractive beauty is perceived in the human species, and particularly in the fair sex.

Milton represents Satan himself, in surveying the furniture of this globe, as struck with the beauty of the first happy pair.

> Two of far nobler shape, erect and tall,
> Godlike erect! with native honour clad
> In naked majesty, seem'd lords of all.
> And worthy seem'd; for in their looks divine,
> The image of their glorious Maker, shone
> Truth, wisdom, sanctitude severe, and pure;
> Severe, but in true filial freedom plac'd,
> Whence true authority in man, though both
> Not equal, as their sex not equal seem'd,
> For contemplation he, and valour form'd,
> For softness she, and sweet attractive grace.

In this well known passage of Milton, we see that this great poet derives the beauty of the first pair in Paradise from those expressions of moral and intellectual qualities which appeared in their outward form and demeanour.

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The most minute and systematical account of beauty in the human species, and particularly in the fair sex, I have met with, is in *Crito; or a Dialogue on Beauty*, said to be written by the author of Polymetis, and republished by Dodsley in his collection of fugitive pieces.

I shall borrow from that author some observations, which, I think, tend to show that the beauty of the human body is derived from the signs it exhibits of some perfection of the mind or person.

All that can be called beauty in the human species may be reduced to these four heads; colour, form, expression, and grace. The two former may be called the body, the two latter the soul of beauty.

The beauty of colour is not owing solely to the natural liveliness of flesh colour and red, nor to the much greater charms they receive from being properly blended together; but is also owing, in some degree, to the idea they carry with them of good health, without which all beauty grows languid and less engaging, and with which it always recovers an additional strength and lustre. This is supported by the authority of Cicero. *Venustas et pulchritudo corporis secerni non potest a valetudine.*

Here I observe, that as the colour of the body is very different in different climates, every nation preferring the colour of its climate; and as among us one man prefers a fair beauty, another a brunette, without being able to give any reason for his preference; this diversity of taste has no standard in the common principles of human nature, but must arise from something that is different in different nations, and in different individuals of the same nation.

I observed before, that fashion, habit, associations, and perhaps some peculiarity of constitution, may have great influence upon this internal sense, as well as upon

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the external. Setting aside the judgments arising from such causes, there seems to remain nothing that, according to the common judgment of mankind, can be called beauty in the colour of the species, but what expresses perfect health and liveliness, and in the fair sex, softness and delicacy; and nothing that can be called deformity but what indicates disease and decline. And if this be so, it follows, that the beauty of colour is derived from the perfections which it expresses. This, however, of all the ingredients of beauty is the least.

The next in order is form, or proportion of parts. The most beautiful form, as the author thinks, is that which indicates delicacy and softness in the fair sex, and in the male either strength or agility. The beauty of form, therefore, lies all in expression.

The third ingredient, which has more power than either colour or form, he calls expression, and observes, that it is only the expression of the tender and kind passions that gives beauty; that all the cruel and unkind ones add to deformity; and that, on this account, good nature may very justly be said to be the best feature, even in the finest face. Modesty, sensibility, and sweetness, blended together, so as either to enliven or to correct each other, give almost as much attraction as the passions are capable of adding to a very pretty face.

It is owing, says the author, to the great force of pleasingness which attends all the kinder passions, that lovers not only seem, but really are, more beautiful to each other than they are to the rest of the world; because, when they are together, the most pleasing passions are more frequently exerted in each of their faces than they are in either before the rest of the world. "There is then," as a French author very well expresses it, "a soul upon their countenances, which

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does not appear when they are absent from one another, or even in company that lays a restraint upon their features.

There is a great difference in the same face, according as the person is in a better or a worse humour, or more or less lively. The best complexion, the finest features, and the exactest shape, without any thing of the mind expressed in the face, is insipid and unmoving. The finest eyes in the world, with an excess of malice or rage in them, will grow shocking. The passions can give beauty without the assistance of colour or form, and take it away where these have united most strongly to give it; and therefore this part of beauty is greatly superior to the other two.

The last and noblest part of beauty is grace, which the author thinks undefinable.

Nothing causes love so generally and irresistibly as grace. Therefore, in the mythology of the Greeks and Romans, the graces were the constant attendants of Venus the goddess of love. Grace is like the cestus of the same goddess, which was supposed to comprehend every thing that was winning and engaging, and to create love by a secret and inexplicable force, like that of some magical charm.

There are two kinds of grace, the majestic and the familiar; the first more commanding, the last more delightful and engaging. The Grecian painters and sculptors used to express the former most strongly in the looks and attitudes of their Minervas, and the latter in those of Venus. This distinction is marked in the description of the personages of virtue and pleasure in the ancient fable of the choice of Hercules.

> Graceful, but each with different grace they move,
> This striking sacred awe, that softer winning love.

In the persons of Adam and Eve in Paradise, Milton has made the same distinction.

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For contemplation he, and valour form'd,
For softness she, and sweet attractive grace.

Though grace be so difficult to be defined, there are two things that hold universally with relation to it. 1st, There is no grace without motion; some genteel or pleasing motion, either of the whole body or of some limb, or at least some feature. Hence, in the face, grace appears only on those features that are moveable, and change with the various emotions and sentiments of the mind, such as the eyes and eyebrows, the mouth and parts adjacent. When Venus appeared to her son Eneas in disguise, and, after some conversation with him, retired, it was by the grace of her motion in retiring that he discovered her to be truly a goddess.

Dixit, et avertens roseâ cervice refulsit,
Ambrosiæque comæ divinum vertice odorem
Spiravere; pedes vestis defluxit ad imos;
Et vera incessu patuit dea. Ille ubi matrem
Agnovit, &c.

A *second* observation is, that there can be no grace with impropriety, or that nothing can be graceful that is not adapted to the character and situation of the person.

From these observations, which appear to me to be just, we may, I think, conclude, that grace, as far as it is visible, consists of those motions, either of the whole body, or of a part or feature, which express the most perfect propriety of conduct and sentiment in an amiable character.

Those motions must be different in different characters; they must vary with every variation of emotion and sentiment; they may express either dignity or respect, confidence or reserve, love or just resentment, esteem or indignation, zeal or indifference. Every passion, sentiment, or emotion, that in its nature and degree is just and proper, and corresponds perfectly with the charac-

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ter of the person, and with the occasion, is what we may call the soul of grace. The body or visible part consists of those motions and features which give the true and unaffected expression of the soul.

Thus, I think, all the ingredients of human beauty, as they are enumerated and described by this ingenious author, terminate in expression: They either express some perfection of the body, as a part of the man, and an instrument of the mind, or some amiable quality or attribute of the mind itself.

It cannot indeed be denied, that the expression of a fine countenance may be unnaturally disjoined from the amiable qualities which it naturally expresses: but we presume the contrary, till we have a clear evidence; and even then, we pay homage to the expression, as we do to the throne when it happens to be unworthily filled.

Whether what I have offered, to show that all the beauty of the objects of sense is borrowed, and derived from the beauties of mind which it expresses or suggests to the imagination, be well founded or not; I hope this terrestrial Venus will not be deemed less worthy of the homage which has always been paid to her, by being conceived more nearly allied to the celestial, than she has commonly been represented.

To make an end of this subject, taste seems to be progressive as man is. Children, when refreshed by sleep, and at ease from pain and hunger, are disposed to attend to the objects about them; they are pleased with brilliant colours, gaudy ornaments, regular forms, cheerful countenances, noisy mirth, and glee. Such is the taste of childhood, which we must conclude to be given for wise purposes. A great part of the happiness of that period of life is derived from it; and therefore it ought to be indulged. It leads them to attend to objects which they may afterward find worthy of their attention. It puts them upon exerting their in-

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flant faculties of body and mind, which, by such exertions, are daily strengthened and improved.

As they advance in years and in understanding, other beauties attract their attention, which, by their novelty or superiority, throw a shade upon those they formerly admired. They delight in feats of agility, strength, and art; they love those that excel in them, and strive to equal them. In the tales and fables they hear, they begin to discern beauties of mind. Some characters and actions appear lovely, others give disgust. The intellectual and moral powers begin to open, and, if cherished by favourable circumstances, advance gradually in strength, till they arrive at that degree of perfection, to which human nature, in its present state, is limited.

In our progress from infancy to maturity, our faculties open in a regular order appointed by nature; the meanest first; those of more dignity in succession, until the moral and rational powers finish the man. Every faculty furnishes new notions, brings new beauties into view, and enlarges the province of taste; so that we may say, there is a taste of childhood, a taste of youth, and a manly taste. Each is beautiful in its season; but not so much so, when carried beyond its season. Not that the man ought to dislike the things that please the child, or the youth, but to put less value upon them, compared with other beauties, with which he ought to be acquainted.

Our moral and rational powers justly claim dominion over the whole man. Even taste is not exempted from their authority; it must be subject to that authority in every case wherein we pretend to reason or dispute about matters of taste; it is the voice of reason that our love or our admiration ought to be proportioned to the merit of the object. When it is not grounded on real worth, it must be the effect of constitution,

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or of some habit or casual association. A fond mother may see a beauty in her darling child, or a fond author in his work, to which the rest of the world are blind. In such cases, the affection is pre-engaged, and, as it were, bribes the judgment, to make the object worthy of that affection. For the mind cannot be easy in putting a value upon an object beyond what it conceives to be due. When affection is not carried away by some natural or acquired bias, it naturally is, and ought to be led by the judgment.

As, in the division which I have followed of our intellectual powers, I mentioned moral perception and consciousness, the reader may expect that some reason should be given, why they are not treated of in this place.

As to consciousness; what I think necessary to be said upon it has been already said, Essay 6. chap. 5. As to the faculty of moral perception, it is indeed a most important part of human understanding, and well worthy of the most attentive consideration, since without it we could have no conception of right and wrong, of duty and moral obligation, and since the first principles of morals, upon which all moral reasoning must be grounded, are its immediate dictates; but as it is an active as well as an intellectual power, and has an immediate relation to the other active powers of the mind, I apprehend that it is proper to defer the consideration of it till these be explained.

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ESSAYS

ON

THE ACTIVE POWERS

OF THE

HUMAN MIND.

INTRODUCTION.

The division of the faculties of the human mind into *Understanding* and *Will* is very ancient, and has been very generally adopted; the former comprehending all our speculative, the latter all our active powers. [Note A.]

It is evidently the intention of our Maker, that man should be an active, and not merely a speculative being. For this purpose, certain active powers have been given him, limited indeed in many respects, but suited to his rank and place in the creation. [Note B.]

Our business is to manage these powers, by proposing to ourselves the best ends, planning the most proper system of conduct that is in our power, and executing it with industry and zeal. This is true wisdom; this is the very intention of our being.

Every thing virtuous and praiseworthy must lie in the right use of our power; every thing vicious and blameable in the abuse of it. What is not within the sphere of our power cannot be imputed to us either for

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blame or praise. These are self-evident truths, to which every unprejudiced mind yields an immediate and invincible assent. [Note C.]

Knowledge derives its value from this, that it enlarges our power, and directs us in the application of it. For in the right employment of our active power consists all the honour, dignity and worth of a man; and, in the abuse and perversion of it, all vice, corruption and depravity. [Note D.]

We are distinguished from the brute animals, not less by our active than by our speculative powers.

The brutes are stimulated to various actions by their instincts, by their appetites, by their passions: but they seem to be necessarily determined by the strongest impulse, without any capacity of self-government. Therefore we do not blame them for what they do; nor have we any reason to think that they blame themselves. They may be trained up by discipline, but cannot be governed by law. There is no evidence that they have the conception of a law, or of its obligation.

Man is capable of acting from motives of a higher nature. He perceives a dignity and worth in one course of conduct, a demerit and turpitude in another, which brutes have not the capacity to discern.

He perceives it to be his duty to act the worthy and the honourable part, whether his appetites and passions incite him to it, or to the contrary. When he sacrifices the gratification of the strongest appetites or passions to duty, this is so far from diminishing the merit of his conduct, that it greatly increases it, and affords, upon reflection, an inward satisfaction and triumph, of which brute animals are not susceptible. When he acts a contrary part, he has a consciousness of demerit, to which they are no less strangers.

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Since, therefore, the active powers of man make so important a part of his constitution, and distinguish him so eminently from his fellow animals, they deserve no less to be the subject of philosophical disquisition than his intellectual powers.

A just knowledge of our powers, whether intellectual or active, is so far of real importance to us, as it aids us in the exercise of them. And every man must acknowledge, that to act properly, is much more valuable than to think justly or reason acutely.

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ESSAY I.

OF ACTIVE POWER IN GENERAL.

CHAP. I.

OF THE NOTION OF ACTIVE POWER.

To consider gravely what is meant by active power, may seem altogether unnecessary, and to be mere trifling. It is not a term of art, but a common word in our language, used every day in discourse, even by the vulgar. We find words of the same meaning in all other languages; and there is no reason to think that it is not perfectly understood by all men who understand the English language.

I believe all this is true, and that an attempt to explain a word so well understood, and to show that it has a meaning, requires an apology.

The apology is, that this term, so well understood by the vulgar, has been darkened by philosophers, who, in this, as in many other instances, have found great difficulties about a thing which, to the rest of mankind, seems perfectly clear.

This has been the more easily effected, because power is a thing so much of its own kind, and so simple in its nature, as not to admit of a logical definition.

It is well known, that there are many things perfectly understood, and of which we have clear and distinct conceptions, which cannot be logically defined. No man ever attempted to define magnitude; yet there

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is no word whose meaning is more distinctly or more generally understood. We cannot give a logical definition of thought, of duration, of number, or of motion.

When men attempt to define such things, they give no light. They may give a synonymous word or phrase, but it will probably be a worse for a better. If they will define, the definition will either be grounded upon a hypothesis, or it will darken the subject rather than throw light upon it.

The Aristotelian definition of motion, that it is "*Actus entis in potentia, quatenus in potentia,*" has been justly censured by modern philosophers; yet I think it is matched by what a celebrated modern philosopher has given us, as the most accurate definition of belief, to wit, "That it is a lively idea related to, or associated with a present impression." Treatise of Human Nature, vol. 1. p. 172. "Memory," according to the same philosopher, "is the faculty by which we repeat our impressions, so as that they retain a considerable degree of their first vivacity, and are somewhat intermediate between an idea and an impression."

Euclid, if his editors have not done him injustice, has attempted to define a right line, to define unity, ratio, and number. But these definitions are good for nothing. We may indeed suspect them not to be Euclid's; because they are never once quoted in the Elements, and are of no use.

I shall not therefore attempt to define active power, that I may not be liable to the same censure; but shall offer some observations that may lead us to attend to the conception we have of it in our own minds.

1st. Power is not an object of any of our external senses, nor even an object of consciousness.

That it is not seen, nor heard, nor touched, nor tasted, nor smelt, needs no proof. That we are not conscious of it, in the proper sense of that word, will be

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no less evident, if we reflect, that consciousness is that power of the mind by which it has an immediate knowledge of its own operations. Power is not an operation of the mind, and therefore no object of consciousness. Indeed every operation of the mind is the exertion of some power of the mind; but we are conscious of the operation only, the power lies behind the scene; and though we may justly infer the power from the operation, it must be remembered, that inferring is not the province of consciousness, but of reason.

I acknowledge, therefore, that our having any conception or idea of power is repugnant to Mr. Locke's theory, that all our simple ideas are got either by the external senses, or by consciousness. Both cannot be true. Mr. Hume perceived this repugnancy, and consistently maintained, that we have no idea of power. Mr. Locke did not perceive it. If he had, it might have led him to suspect his theory; for when theory is repugnant to fact, it is easy to see which ought to yield. I am conscious that I have a *conception* or *idea* of power, but, strictly speaking, I am not conscious that I have *power*.

I shall have occasion to show, that we have very early, from our constitution, a conviction or belief of some degree of active power in ourselves. This belief, however, is not consciousness: for we may be deceived in it; but the testimony of consciousness can never deceive. Thus, a man who is struck with a palsy in the night, commonly knows not that he has lost the power of speech till he attempts to speak; he knows not whether he can move his hands and arms till he makes the trial; and if, without making trial, he consults his consciousness ever so attentively, it will give him no information whether he has lost these powers, or still retains them.

From this we must conclude, that the powers we have are not an object of consciousness, though it

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would be foolish to censure this way of speaking in popular discourse, which requires not accurate attention to the different provinces of our various faculties. The testimony of consciousness is always unerring, nor was it ever called in question by the greatest skeptics, ancient or modern.

2dly, A *second* observation is, that as there are some things of which we have a direct, and others of which we have only a relative conception, power belongs to the latter class.

As this distinction is overlooked by most writers in logic, I shall beg to illustrate it a little, and then shall apply it to the present subject.

Of some things, we know what they are in themselves; our conception of such things I call *direct*. Of other things, we know not what they are in themselves, but only that they have certain properties or attributes, or certain relations to other things; of these our conception is only *relative*.

To illustrate this by some examples: in the university library, I call for the book, press L, shelf 10. No. 10. the library keeper must have such a conception of the book I want, as to be able to distinguish it from ten thousand that are under his care. But what conception does he form of it from my words? They inform him neither of the author, nor the subject, nor the language, nor the size, nor the binding, but only of its mark and place. His conception of it is merely relative to these circumstances; yet this relative notion enables him to distinguish it from every other book in the library.

There are other relative notions that are not taken from accidental relations, as in the example just now mentioned, but from qualities or attributes essential to the thing.

Of this kind are our notions both of body and mind. What is body? It is, say philosophers, that which is

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extended, solid, and divisible. Says the querist, I do not ask what the properties of body are, but what is the thing itself? Let me first know directly what body is, and then consider its properties. To this demand I am afraid the querist will meet with no satisfactory answer; because our notion of body is not direct but relative to its qualities. We know that it is something extended, solid, and divisible, and we know no more.

Again, if it should be asked, What is mind? It is that which thinks. I ask not what it does, or what its operations are, but what it is? To this I can find no answer; our notion of mind being not direct, but relative to its operations, as our notion of body is relative to its qualities.

There are even many of the qualities of body, of which we have only a relative conception. What is heat in a body? It is a quality which affects the sense of touch in a certain way. If you want to know, not how it affects the sense of touch, but what it is in itself; this I confess I know not. My conception of it is not direct, but relative to the effect it has upon bodies. The notions we have of all those qualities which Mr. Locke calls secondary, and of those he calls powers of bodies, such as the power of the magnet to attract iron, or of fire to burn wood, are relative.

Having given examples of things of which our conception is only relative, it may be proper to mention some of which it is direct. Of this kind, are all the primary qualities of body; figure, extension, solidity, hardness, fluidity, and the like. Of these we have a direct and immediate knowledge from our senses. To this class belong also all the operations of mind of which we are conscious. I know what thought is, what memory, what a purpose, what a promise.

There are some things of which we can have both a direct and a relative conception. I can directly con-

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ceive ten thousand men or ten thousand pounds, because both are objects of sense, and may be seen. But whether I see such an object, or directly conceive it, my notion of it is indistinct; it is only that of a great multitude of men, or of a great heap of money; and a small addition or diminution makes no perceptible change in the notion I form in this way. But I can form a relative notion of the same number of men or of pounds, by attending to the relations which this number has to other numbers, greater or less. Then I perceive that the relative notion is distinct and scientific. For the addition of a single man, or a single pound, or even of a penny, is easily perceived.

In like manner, I can form a direct notion of a polygon of a thousand equal sides and equal angles. This direct notion cannot be more distinct, when conceived in the mind, than that which I get by sight, when the object is before me; and I find it so indistinct, that it has the same appearance to my eye, or to my direct conception, as a polygon of a thousand and one, or of nine hundred and ninety-nine sides. But when I form a relative conception of it, by attending to the relation it bears to polygons of a greater or less number of sides, my notion of it becomes distinct and scientific, and I can demonstrate the properties by which it is distinguished from all other polygons. From these instances it appears, that our relative conceptions of things are not always less distinct, nor less fit materials for accurate reasoning, than those that are direct; and that the contrary may happen in a remarkable degree.

Our conception of power is relative to its exertions or effects. Power is one thing; its exertion is another thing. It is true, there can be no exertion without power; but there may be power that is not exerted. Thus a man may have power to speak when he is

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silent; he may have power to rise and walk when he sits still.

But, though it be one thing to speak, and another to have the power of speaking, I apprehend we conceive of the power as something which has a certain relation to the effect. And of every power we form our notion by the effect which it is able to produce.

3dly, It is evident that power is a quality, and cannot exist without a subject to which it belongs.

That power may exist without any being or subject to which that power may be attributed, is an absurdity, shocking to every man of common understanding.

It is a quality which may be varied, not only in degree, but also in kind; and we distinguish both the kinds and degrees by the effects which they are able to produce.

Thus a power to fly, and a power to reason, are different kinds of power, their effects being different in kind. But a power to carry one hundred weight, and a power to carry two hundred, are different degrees of the same kind.

4thly, We cannot conclude the want of power from its not being exerted; nor from the exertion of a less degree of power, can we conclude that there is no greater degree in the subject. Thus, though a man on a particular occasion said nothing, we cannot conclude from that circumstance, that he had not the power of speech; nor from a man's carrying ten pounds weight, can we conclude that he had not the power to carry twenty.

5thly, There are some qualities that have a contrary, others that have not; power is a quality of the latter kind.

Vice is contrary to virtue, misery to happiness, hatred to love, negation to affirmation; but there is no contrary to power. Weakness or impotence are defects or privations of power, but not contraries to it.

If what has been said of power be easily understood, and readily assented to, by all who understand our lan-

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guage, as I believe it is, we may from this justly conclude, that we have a distinct notion of power, and may reason about it with understanding, though we can give no logical definition of it.

If power were a thing of which we have no ideas, as some philosophers have taken much pains to prove, that is, if power were a word without any meaning, we could neither affirm nor deny any thing concerning it with understanding. We should have equal reason to say that it is a substance, as that it is a quality; that it does not admit of degrees, as that it does. If the understanding immediately assents to one of these assertions, and revolts from the contrary, we may conclude with certainty, that we put some meaning upon the word *power*, that is, that we have some idea of it. And it is chiefly for the sake of this conclusion, that I have enumerated so many obvious things concerning it.

The term *active power* is used, I conceive, to distinguish it from speculative powers. As all languages distinguish action from speculation, the same distinction is applied to the powers by which they are produced. The powers of seeing, hearing, remembering, distinguishing, judging, reasoning, are speculative powers; the power of executing any work of art or labour is active power.

There are many things related to power, in such a manner, that we can have no notion of them if we have none of power.

The exertion of active power we call *action;* and as every action produces some change, so every change must be caused by some exertion, or by the cessation of some exertion of power. That which produces a change by the exertion of its power, we call the *cause* of that change; and the change produced, the *effect* of that cause.

When one being, by its active power, produces any change upon another, the last is said to be *passive*, or

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to be acted upon. Thus we see, that action and passion, cause and effect, exertion and operation, have such a relation to active power, that if it be understood, they are understood of consequence; but if power be a word without any meaning, all those words which are related to it, must be words without any meaning. They are, however, common words in our language; and equivalent words have always been common in all languages.

It would be very strange indeed, if mankind had always used these words so familiarly, without perceiving that they had no meaning; and that this discovery should have been first made by a philosopher of the present age.

With equal reason it might be maintained, that though there are words in all languages to express sight, and words to signify the various colours which are objects of sight; yet that all mankind from the beginning of the world had been blind, and never had an idea of sight or of colour. But there are no absurdities so gross as those which philosophers have advanced concerning ideas.

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CHAP. II.

THE SAME SUBJECT.

There are, I believe, no abstract notions, that are to be found more early, or more universally, in the minds of men, than those of acting, and being acted upon. Every child that understands the distinction between striking and being struck, must have the conception of action and passion.

We find accordingly, that there is no language so imperfect, but that it has active and passive verbs, and participles; the one signifying some kind of action; the other the being acted upon. This distinction enters into the original contexture of all languages.

Active verbs have a form and construction proper to themselves; passive verbs a different form and a different construction. In all languages, the nominative to an active verb is the agent; the thing acted upon is put in an oblique case. In passive verbs, the thing acted upon is the nominative, and the agent, if expressed, must be in an oblique case; as in this example: *Raphael drew the Cartoons; the Cartoons were drawn by Raphael.*

Every distinction which we find in the structure of all languages, must have been familiar to those who framed the languages at first, and to all who speak them with understanding.

It may be objected to this argument, taken from the structure of language, in the use of active and passive verbs, that active verbs are not always used to denote an action, nor is the nominative before an active verb conceived in all cases to be an agent in the strict sense of that word; that there are many passive verbs which have an active signification, and active verbs

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which have a passive. From these facts, it may be thought a just conclusion, that in contriving the different forms of active and passive verbs, and their different construction, men have not been governed by a regard to any distinction between action and passion, but by chance, or some accidental cause.

In answer to this objection, the fact on which it is founded, must be admitted; but I think the conclusion not justly drawn from it, for the following reasons.

1st, It seems contrary to reason, to attribute to chance or accident, what is subject to rules, even though there may be exceptions to the rule. The exceptions may, in such a case, be attributed to accident, but the rule cannot. There is perhaps hardly any thing in language so general, as not to admit of exceptions. It cannot be denied to be a general rule, that verbs and participles have an active and a passive voice; and as this is a general rule, not in one language only, but in all the languages we are acquainted with, it shows evidently that men, in the earliest stages, and in all periods of society, have distinguished action from passion.

2dly, It is to be observed, that the forms of language are often applied to purposes different from those for which they were originally intended. The varieties of a language, even the most perfect, can never be made equal to all the variety of human conceptions. The forms and modifications of language must be confined within certain limits, that they may not exceed the capacity of human memory. Therefore, in all languages, there must be a kind of frugality used, to make one form of expression serve many different purposes, like sir Hudibras's dagger, which, though made to stab or break a head, was put to many other uses. Many examples might be produced of this frugality in language. Thus the Latins and Greeks had five or six

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cases of nouns, to express all the various relations that one thing could bear to another. The genitive case must have been at first intended to express some one capital relation, such as that of possession or of property; but it would be very difficult to enumerate all the relations which, in the progress of language, it was used to express. The same observation may be applied to other cases of nouns.

The slightest similitude or analogy is thought sufficient to justify the extension of a form of speech beyond its proper meaning, whenever the language does not afford a more proper form. In the moods of verbs, a few of those which occur most frequently are distinguished by different forms, and these are made to supply all the forms that are wanting. The same observation may be applied to what is called the *voices* of verbs. An active and a passive are the capital ones; some languages have more, but no language so many as to answer to all the variations of human thought. We cannot always coin new ones, and therefore must use some one or other of those that are to be found in the language, though at first intended for another purpose.

3dly, A third observation in answer to the objection is, that we can point out a cause of the frequent misapplication of active verbs, to things which have no proper activity: a cause which extends to the greater part of such misapplications, and which confirms the account I have given of the proper intention of active and passive verbs.

As there is no principle, that appears to be more universally acknowledged by mankind, from the first dawn of reason, than, that every change we observe in nature must have a cause; so this is no sooner perceived, than there arises in the human mind, a strong desire to know the causes of those changes that fall

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within our observation. *Felix qui potuit rerum cognoscere causas*, is the voice of nature in all men. Nor is there any thing that more early distinguishes the rational from the brute creation, than this avidity to know the causes of things, of which I see no sign in brute animals.

It must surely be admitted, that in those periods wherein languages are formed, men are but poorly furnished for carrying on this investigation with success. We see, that the experience of thousands of years is necessary to bring men into the right track in this investigation, if indeed they can yet be said to be brought into it. What innumerable errors rude ages must fall into, with regard to causes, from impatience to judge, and inability to judge right, we may conjecture from reason, and may see from experience; from which I think, it is evident, that supposing active verbs to have been originally intended to express what is properly called action, and their nominatives to express the agent; yet, in the rude and barbarous state wherein languages are formed, there must be innumerable misapplications of such verbs and nominatives, and many things spoken of as active, which have no real activity.

To this we may add, that it is a general prejudice of our early years, and of rude nations, when we perceive any thing to be changed, and do not perceive any other thing which we can believe to be the cause of that change, to impute it to the thing itself, and conceive it to be active and animated, so far as to have the power of producing that change in itself. Hence, to a child, or to a savage, all nature seems to be animated; the sea, the earth, the air, the sun, moon, and stars, rivers, fountains, and groves, are conceived to be active and animated beings. As this is a sentiment natural to man in his rude state, it has, on that account, even in polished nations, the verisimilitude that is

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required in poetical fiction and fable, and makes personification one of the most agreeable figures in poetry and eloquence.

The origin of this prejudice probably is, that we judge of other things by ourselves, and therefore are disposed to ascribe to them that life and activity which we know to be in ourselves.

A little girl ascribes to her doll, the passions and sentiments she feels in herself. Even brutes seem to have something of this nature. A young cat, when she sees any brisk motion in a feather or a straw, is prompted, by natural instinct, to hunt it as she would hunt a mouse.

Whatever be the origin of this prejudice in mankind, it has a powerful influence upon language, and leads men, in the structure of language, to ascribe action to many things that are merely passive; because, when such forms of speech were invented, those things were really believed to be active. Thus we say, the wind blows, the sea rages, the sun rises and sets, bodies gravitate and move.

When experience discovers that these things are altogether inactive, it is easy to correct our opinion about them; but it is not so easy to alter the established forms of language. The most perfect and the most polished languages are like old furniture, which is never perfectly suited to the present taste, but retains something of the fashion of the times when it was made.

Thus, though all men of knowledge believe, that the succession of day and night is owing to the rotation of the earth round its axis, and not to any diurnal motion of the heavens; yet we find ourselves under a necessity of speaking in the old style, of the sun's rising and going down, and coming to the meridian. And this style is used, not only in conversing with the vulgar,

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but when men of knowledge converse with one another. And if we should suppose the vulgar to be at last so far enlightened as to have the same belief with the learned of the cause of day and night, the same style would still be used.

From this instance we may learn, that the language of mankind may furnish good evidence of opinions which have been early and universally entertained, and that the forms contrived for expressing such opinions, may remain in use after the opinions which gave rise to them have been greatly changed.

Active verbs appear plainly to have been first contrived to express action. They are still in general applied to this purpose. And though we find many instances of the application of active verbs to things which we now believe not to be active, this ought to be ascribed to men's having once had the belief that those things are active, and perhaps, in some cases, to this, that forms of expression are commonly extended, in course of time, beyond their *original intention*, either from analogy, or because more proper forms for the purpose are not found in the language.

Even the misapplication of this notion of action and active power shows that there is such a notion in the human mind, and shows the necessity there is in philosophy of distinguishing the proper application of these words, from the vague and improper application of them, founded on common language, or on popular prejudice.

Another argument to show that all men have a notion or idea of active power is, that there are many operations of mind common to all men who have reason, and necessary in the ordinary conduct of life, which imply a belief of active power in ourselves and in others.

All our volitions and efforts to act, all our deliberations, our purposes and promises, imply a belief of

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active power in ourselves; our counsels, exhortations, and commands, imply a belief of active power in those to whom they are addressed.

If a man should make an effort to fly to the moon; if he should even deliberate about it, or resolve to do it, we should conclude him to be lunatic; and even lunacy would not account for his conduct, unless it made him believe the thing to be in his power.

If a man promises to pay me a sum of money to-morrow, without believing that it will then be in his power, he is not an honest man; and, if I did not believe that it will then be in his power, I should have no dependence on his promise.

All our power is, without doubt, derived from the Author of our being; and as he gave it freely, he may take it away when he will. No man can be certain of the continuance of any of his powers of body or mind for a moment; and, therefore, in every promise, there is a condition understood; to wit, if we live, if we retain that health of body and soundness of mind which is necessary to the performance; and if nothing happen, in the providence of God, which puts it out of our power. The rudest savages are taught by nature to admit these conditions in all promises, whether they be expressed or not; and no man is charged with breach of promise, when he fails through the failure of these conditions.

It is evident, therefore, that without the belief of some active power, no honest man would make a promise, no wise man would trust to a promise; and it is no less evident, that the belief of active power, in ourselves, or in others, implies an idea or notion of active power.

The same reasoning may be applied to every instance wherein we give counsel to others, wherein we persuade or command. As long, therefore, as mankind are beings who can deliberate, and resolve, and will;

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as long as they can give counsel, and exhort, and command, they must believe the existence of active power in themselves, and in others, and therefore must have a notion or idea of active power.

It might further be observed, that power is the proper and immediate object of ambition, one of the most universal passions of the human mind, and that which makes the greatest figure in the history of all ages. Whether Mr. Hume, in defence of his system, would maintain that there is no such passion in mankind as ambition, or that ambition is not a vehement desire of power, or that men may have a vehement desire of power, without having any idea of power, I will not pretend to divine.

I cannot help repeating my apology for insisting so long in the refutation of so great an absurdity. It is a capital doctrine in a late celebrated system of human nature, that we have no idea of power, not even in the Deity; that we are not able to discover a single instance of it, either in body or spirit, either in superior or inferior natures; and that we deceive ourselves when we imagine that we are possessed of any idea of this kind.

To support this important doctrine, and the outworks that are raised in its defence, a great part of the first volume of the Treatise of Human Nature is employed. That system abounds with conclusions the most absurd that ever were advanced by any philosopher, deduced with great acuteness and ingenuity from principles commonly received by philosophers. To reject such conclusions as unworthy of a hearing, would be disrespectful to the ingenious author; and to refute them is difficult, and appears ridiculous.

It is difficult, because we can hardly find principles to reason from, more evident than those we wish to prove; and it appears ridiculous, because, as this an-

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thor justly observes, next to the ridicule of denying an evident truth, is that of taking much pains to prove it.

Protestants complain with justice of the hardship put upon them by Roman Catholics, in requiring them to prove that bread and wine is not flesh and blood. They have, however, submitted to this hardship for the sake of truth. I think it is no less hard to be put to prove that men have an idea of power.

What convinces myself that I have an idea of power is, that I am conscious that I know what I mean by that word; and, while I have this consciousness, I disdain equally to hear arguments for or against my having such an idea. But if we would convince those who, being led away by prejudice, or by authority, deny that they have any such idea, we must condescend to use such arguments as the subject will afford, and such as we should use with a man who should deny that mankind have any idea of magnitude or of equality.

The arguments I have adduced are taken from these five topics: 1st, That there are many things that we can affirm or deny concerning power, with understanding. 2dly, That there are, in all languages, words signifying, not only power, but signifying many other things that imply power, such as, action and passion, cause and effect, energy, operation, and others. 3dly, That in the structure of all languages, there is an active and passive form in verbs and participles, and a different construction adapted to these forms, of which diversity no account can be given, but that it has been intended to distinguish action from passion. 4thly, That there are many operations of the human mind familiar to every man come to the use of reason, and necessary in the ordinary conduct of life, which imply a conviction of some degree of power in ourselves and in others. 5thly, That the desire of power is one of the strongest passions of human nature.

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CHAP. III.

OF MR. LOCKE'S ACCOUNT OF OUR IDEA OF POWER.

This author, having refuted the Cartesian doctrine of innate ideas, took up, perhaps too rashly, an opinion that all our simple ideas are got, either by sensation, or by reflection; that is, by our external senses, or by consciousness of the operations of our own minds.

Through the whole of his Essay, he shows a fatherly affection to this opinion; and often strains very hard to reduce our simple ideas to one of those sources, or both. Of this, several instances might be given, in his account of our idea of substance, of duration, of personal identity. Omitting these, as foreign to the present subject, I shall only take notice of the account he gives of our idea of power.

The sum of it is, that observing, by our senses, various changes in objects, we collect a possibility in one object to be changed, and in another a possibility of making that change, and so come by that idea which we call power.

Thus we say the fire has a power to melt gold, and gold has power to be melted; the first he calls active, the second passive power.

He thinks, however, that we have the most distinct, notion of active power, by attending to the power which we ourselves exert, in giving motion to our bodies when at rest, or in directing our thoughts to this or the other object as we will. And this way of forming the idea of power, he attributes to reflection, as he refers the former to sensation.

On this account of the origin of our idea of power, I would beg leave to make two remarks, with the re-

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spect that is most justly due to so great a philosopher, and so good a man.

1st. Whereas he distinguishes power into *active* and *passive*, I conceive passive power is no power at all. He means by it, the possibility of being changed. To call this *power*, seems to be a misapplication of the word. I do not remember to have met with the phrase *passive power* in any other good author. Mr. Locke seems to have been unlucky in inventing it; and it deserves not to be retained in our language.

Perhaps he was unwarily led into it, as an opposite to active power. But I conceive we call certain powers *active*, to distinguish them from other powers that are called *speculative*. As all mankind distinguish action from speculation, it is very proper to distinguish the powers by which those different operations are performed, into active and speculative. Mr. Locke indeed acknowledges, that active power is more properly called *power*; but I see no propriety at all in passive power; it is a powerless power, and a contradiction in terms.

2dly, I would observe, that Mr. Locke seems to have imposed upon himself, in attempting to reconcile this account of the idea of power to his favourite doctrine, that all our simple ideas are ideas of sensation, or of reflection.

There are two steps, according to his account, which the mind takes, in forming this idea of power; 1st, it observes changes in things; and, 2dly, from these changes, it infers a cause of them, and a power to produce them.

If both these steps are operations of the external senses, or of consciousness, then the idea of power may be called an idea of sensation, or of reflection. But, if either of those steps require the co-operation of other powers of the mind, it will follow, that the idea

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of power cannot be got by sensation, nor by reflection, nor by both together. Let us, therefore, consider each of these steps by itself.

1st, We observe various changes in things. And Mr. Locke takes it for granted, that changes in external things are observed by our senses, and that changes in our thoughts are observed by consciousness.

I grant that it may be said, that changes in things are observed by our senses, when we do not mean to exclude every other faculty from a share in this operation. And it would be ridiculous to censure the phrase, when it is so used in popular discourse. But it is necessary to Mr. Locke's purpose, that changes in external things should be observed by the senses alone, excluding every other faculty; because every faculty that is necessary in order to observe the change, will claim a share in the origin of the idea of power.

Now, it is evident, that memory is no less necessary than the senses, in order to our observing changes in external things; and therefore, the idea of power, derived from the changes observed, may as justly be ascribed to memory as to the senses.

Every change supposes two states of the thing changed. Both these states may be past; one of them at least must be past; and one only can be present. By our senses we may observe the present state of the thing; but memory must supply us with the past; and, unless we remember the past state, we can perceive no change.

The same observation may be applied to consciousness. The truth, therefore, is, that, by the senses alone, without memory, or by consciousness alone, without memory, no change can be observed. Every idea, therefore, that is derived from observing changes in things, must have its origin, partly from memory, and not from the senses alone, nor from consciousness alone, nor from both together.

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The *second* step made by the mind in forming this idea of power is this: from the changes observed we collect a cause of those changes and a power to produce them.

Here one might ask Mr. Locke, whether it is by our senses that we draw this conclusion, or is it by consciousness? Is reasoning the province of the senses, or is it the province of consciousness? If the senses can draw one conclusion from premises, they may draw five hundred, and demonstrate the whole elements of Euclid.

Thus, I think, it appears, that the account which Mr. Locke himself gives of the origin of our idea of power, cannot be reconciled to his favourite doctrine, that all our simple ideas have their origin from sensation or reflection; and that, in attempting to derive the idea of power from these two sources only, he unawares brings in our memory, and our reasoning power, for a share in its origin.

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CHAP. IV.

OF MR. HUME'S OPINION OF THE IDEA OF POWER.

THIS very ingenious author adopts the principle of Mr. Locke before mentioned, that all our simple ideas are derived either from sensation or reflection. This he seems to understand, even in a stricter sense than Mr. Locke did. For he will have all our simple ideas to be copies of preceding impressions, either of our external senses or of consciousness. "After the most accurate examination," says he, "of which I am capable, I venture to affirm, that the rule here holds without any exception, and that every simple idea has a simple impression which resembles it, and every simple impression a correspondent idea. Every one may satisfy himself in this point, by running over as many as he pleases."

I observe here, by the way, *that this conclusion* is formed by the author rashly and unphilosophically. For it is a conclusion that admits of no proof, but by induction; and it is upon this ground that he himself founds it. The induction cannot be perfect till every simple idea that can enter into the human mind be examined, and be shown to be copied from a resembling impression of sense or of consciousness. No man can pretend to have made this examination of all our simple ideas without exception; and, therefore, no man can, consistently with the rules of philosophizing, assure us, that this conclusion holds without any exception.

The author professes, in his title page, to introduce into moral subjects the experimental method of reasoning. This was a very laudable attempt; but he ought to have known, that it is a rule in the experi-

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mental method of reasoning, that conclusions, established by induction ought never to exclude exceptions, if any such should afterward appear from observation or experiment. Sir Isaac Newton, speaking of such conclusions, says, "Et si quando in experiundo postea, reperiatur aliquid, quod a parte contraria faciat; tum demum, non sine istis exceptionibus affirmetur conclusio opportebit." "But," says our author, "I will venture to affirm, that the rule here holds without any exception."

Accordingly, throughout the whole treatise, this general rule is considered as of sufficient authority, in itself, to exclude, even from a hearing, every thing that appears to be an exception to it. This is contrary to the fundamental principles of the experimental method of reasoning, and therefore may be called rash and unphilosophical.

Having thus established this general principle, the author does great execution by it among our ideas. He finds, that we have no idea of substance, material or spiritual; that body and mind are only certain trains of related impressions and ideas; that we have no idea of space or duration, and no idea of power, active or intellective.

Mr. Locke used his principle of sensation and reflection with greater moderation and mercy. Being unwilling to thrust the ideas we have mentioned into the *limbo* of non-existence, he stretches sensation and reflection to the very utmost, in order to receive these ideas within the pale; and draws them into it, as it were by violence.

But this author, instead of showing them any favour, seems fond to get rid of them.

Of the ideas mentioned, it is only that of power, that concerns our present subject. And, with regard to this, the author boldly affirms, "That we never

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have any idea of power; that we deceive ourselves when we imagine we are possessed of any idea of this kind."

He begins with observing, "That the terms *efficacy, agency, power, force, energy*, are all nearly synonymous; and therefore it is an absurdity to employ any of them in defining the rest. By this observation," says he, "we reject at once all the vulgar definitions which philosophers have given of *power* and *efficacy*."

Surely this author was not ignorant, that there are many things of which we have a clear and distinct conception, which are so simple in their nature, that they cannot be defined any other way than by synonymous words. It is true that this is not a logical definition, but that there is, as he affirms, an absurdity in using it, when no better can be had, I cannot perceive.

He might here have applied to *power* and *efficacy* what he says, in another place, of *pride* and *humility*. "The passions of *pride* and *humility*," he says, "being simple and uniform impressions, it is impossible we can ever give a just definition of them. As the words are of general use, and the things they represent the most common of any, every one, of himself, will be able to form a just notion of them without danger of mistake."

He mentions Mr. Locke's account of the idea of power, that, observing various changes in things, we conclude, that there must be somewhere a power capable of producing them, and so arrive at last, by this reasoning, at the idea of power and efficacy.

"But," says he, "to be satisfied that this explication is more popular than philosophical, we need but reflect on two very obvious principles; 1st, that reason alone can never give rise to any original idea; and 2dly, that reason, as distinguished from experience, can never make us conclude, that a cause,

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or productive quality, is absolutely requisite to every beginning of existence."

Before we consider the two principles which our author opposes to the popular opinion of Mr. Locke, I observe,

1st, That there are some *popular* opinions, which, on that very account, deserve more regard from philosophers, than this author is willing to bestow.

That things cannot begin to exist, nor undergo any change, without a cause that has power to produce that change, is indeed so popular an opinion, that, I believe, this author is the first of mankind that ever called it in question. It is so popular, that there is not a man of common prudence who does not act from this opinion, and rely upon it every day of his life. And any man who should conduct himself by the contrary opinion, would soon be confined as insane, and continue in that state, till a sufficient cause was found for his enlargement.

Such a popular opinion as this, stands upon a higher authority than that of philosophy; and philosophy must strike sail to it, if she would not render herself contemptible to every man of common understanding.

For though, in matters of deep speculation, the multitude must be guided by philosophers, yet, in things that are within the reach of every man's understanding, and upon which the whole conduct of human life turns, the philosopher must follow the multitude, or make himself perfectly ridiculous.

2dly, I observe, that whether this popular opinion be true or false, it follows, from men's having this opinion, that they have an idea of power. A false opinion about power, no less than a true, implies an idea of power; for how can men have any opinion, true or false, about a thing of which they have no idea?

The 1st, of the very obvious principles which the author opposes to Mr. Locke's account of the idea of

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power, is, that reason alone can never give rise to any original idea.

This appears to me so far from being a very obvious principle, that the contrary is very obvious.

Is it not our reasoning faculty that gives rise to the idea of reasoning itself? As our idea of sight takes its rise from our being endowed with that faculty, so does our idea of reasoning. Do not the ideas of demonstration, of probability, our ideas of a syllogism, of major, minor, and conclusion, of an enthymeme, dilemma, sorites, and all the various modes of reasoning, take their rise from the faculty of reason? Or is it possible, that a being, not endowed with the faculty of reasoning, should have these ideas? This principle, therefore, is so far from being obviously true, that it appears to be obviously false.

The 2nd, obvious principle is, that reason, as distinguished from experience, can never make us conclude, that a cause, or productive quality, is absolutely requisite to every beginning of existence.

In some Essays on the Intellectual Powers of Man, I had occasion to treat of this principle, that every change in nature must have a cause; and, to prevent repetition, I beg leave to refer the reader to what is said upon this subject, Essay vi. chap. 6. I endeavoured to show, that it is a first principle, evident to all men come to years of understanding. Besides its having been universally received, without the least doubt, from the beginning of the world, it has this sure mark of a first principle, that the belief of it is absolutely necessary in the ordinary affairs of life, and, without it, no man could act with common prudence, or avoid the imputation of insanity. Yet a philosopher, who acted upon the firm belief of it every day of his life, thinks fit, in his closet, to call it in question.

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He insinuates here, that we may know it from experience. I endeavoured to show, that we do not learn it from experience, for two reasons.

1st, Because it is a necessary truth, and has always been received as a necessary truth. Experience gives no information of what is necessary, or of what must be.

We may know from experience, what is, or what was, and from that may probably conclude what shall be in like circumstances; but, with regard to what must necessarily be, experience is perfectly silent.

Thus we know, by unvaried experience, from the beginning of the world, that the sun, and stars rise in the east and set in the west. But no man believes, that it could not possibly have been otherwise, or that it did not depend upon the will and power of him who made the world, whether the earth should revolve to the east or to the west.

In like manner, if we had experience, ever so constant, that every change in nature we have observed, actually had a cause, this might afford ground to believe, that, for the future, it shall be so; but no ground at all to believe that it must be so, and cannot be otherwise.

Another reason to show that this principle is not learned from experience, is, that experience does not show us a cause of one in a hundred of those changes which we observe, and therefore can never teach us that there must be a cause of all.

Of all the paradoxes this author has advanced, there is not one more shocking to the human understanding than this, that things may begin to exist without a cause. This would put an end to all speculation, as well as to all the business of life. The employment of speculative men, since the beginning of the world, has been to investigate the causes of things. What pity is it, they never thought of putting the previous question,

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whether things have a cause or not? This question has at last been started; and what is there so ridiculous as not to be maintained by some philosopher?

Enough has been said upon it, and more, I think, than it deserves. But, being about to treat of the active powers of the human mind, I thought it improper to take no notice of what has been said by so celebrated a philosopher, to show, that there is not, in the human mind, any idea of power.

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CHAP. V.

WHETHER BEINGS THAT HAVE NO WILL NOR UNDERSTANDING MAY HAVE ACTIVE POWER?

THAT active power is an attribute, which cannot exist but in some being possessed of that power, and the subject of that attribute, I take for granted as a self-evident truth. Whether there can be active power in a subject which has no thought, nor understanding, no will, is not so evident.

The ambiguity of the words *power*, *cause*, *agent*, and of all the words related to these, tends to perplex this question. The weakness of human understanding, which gives us only an indirect and relative conception of power, contributes to darken our reasoning, and should make us cautious and modest in our determinations.

We can derive little light in this matter from the events which we observe in the course of nature. We perceive changes innumerable in things without us. We know that those changes must be produced by the active power of some agent; but we neither perceive the agent nor the power, but the change only. Whether the things be active, or merely passive, is not easily discovered. And though it may be an object of curiosity to the speculative few, it does not greatly concern the many.

To know the event and the circumstances that attended it, and to know in what circumstances like events may be expected, may be of consequence in the conduct of life; but to know the real efficient, whether it be matter or mind, whether of a superior or inferior order, concerns us little.

Thus it is with regard to all the effects we ascribe to nature.

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Nature is the name we give to the efficient cause of innumerable effects which fall daily under our observation. But if it be asked what nature is? Whether the first universal cause, or a subordinate one, whether one or many, whether intelligent or unintelligent? Upon these points we find various conjectures and theories, but no solid ground upon which we can rest. And I apprehend the wisest men are they who are sensible that they know nothing of the matter.

From the course of events in the natural world, we have sufficient reason to conclude the existence of an eternal intelligent First Cause. But whether he acts immediately in the production of those events, or by subordinate intelligent agents, or by instruments that are unintelligent, and what the number, the nature, and the different offices of those agents or instruments may be; these I apprehend to be mysteries placed beyond the limits of human knowledge. We see an established order in the succession of natural events, but we see not the bond that connects them together.

Since we derive so little light, with regard to efficient causes and their active power, from attention to the natural world, let us next attend to the moral, I mean, to human actions and conduct.

Mr. Locke observes very justly, "That, from the observation of the operation of bodies by our senses, we have but a very imperfect obscure idea of active power, since they afford us not any idea in themselves of the power to begin any action, either of motion or thought." He adds, "That we find in ourselves a power to begin or forbear, continue or end several actions of our minds and motions of our bodies, barely by a thought or preference of the mind, ordering, or, as it were, commanding the doing or not doing such a particular action. This power which the mind has thus to order the consideration of any idea, or the forbearing to consider it,

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or to prefer the motion of any part of the body to its rest, and *vice versa*, in any particular instance, is that which we call *the will*. The actual exercise of that power, by directing any particular action, or its forbearance, is that which we call *volition*, or *willing*."

According to Mr. Locke, therefore, the only clear notion or idea we have of active power, is taken from the power which we find in ourselves to give certain motions to our bodies, or a certain direction to our thoughts; and this power in ourselves can be brought into action only by willing or volition.

From this, I think, it follows, that, if we had not will, and that degree of understanding which will necessarily implies, we could exert no active power, and consequently could have none: for power that cannot be exerted is no power. It follows also, that the active power, of which only we can have any distinct conception, can be only in beings that have understanding and will.

Power to produce any effect implies power not to produce it. We can conceive no way in which power may be determined to one of these rather than the other, in a being that has no will.

Whatever is the effect of active power must be something that is contingent. Contingent existence is that which depended upon the power and will of its cause. Opposed to this, is necessary existence, which we ascribe to the Supreme Being, because his existence is not owing to the power of any being. The same distinction there is between contingent and necessary truth.

That the planets of our system go round the sun from west to east, is a contingent truth; because it depended upon the power and will of him who made the planetary system, and gave motion to it. That a circle and a right line can cut one another only in two points, is a truth which depends upon no power nor will, and

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therefore is called necessary and immutable. Contingency, therefore, has a relation to active power, as all active power is exerted in contingent events; and as such events can have no existence, but by the exertion of active power.

When I observe a plant growing from its seed to maturity, I know that there must be a cause that has power to produce this effect. But I see neither the cause nor the manner of its operation.

But in certain motions of my body, and directions of my thought, I know, not only that there must be a cause that has power to produce these effects, but that I am that cause; and I am conscious of what I do in order to the production of them.

From the consciousness of our own activity, seems to be derived, not only the clearest, but the only conception we can form of activity, or the exertion of active power.

As I am unable to form a notion of any intellectual power different in kind from those I possess, the same holds with respect to active power. If all men had been blind, we should have had no conception of the power of seeing, nor any name for it in language. If man had not the powers of abstraction and reasoning, we could not have had any conception of these operations. In like manner, if he had not some degree of active power, and if he were not conscious of the exertion of it in his voluntary actions, it is probable he could have no conception of activity, or of active power.

A train of events following one another ever so regularly, could never lead us to the notion of a cause, if we had not, from our constitution, a conviction of the necessity of a cause to every event.

And of the manner in which a cause may exert its active power, we can have no conception but from consciousness of the manner in which our own active power is exerted.

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With regard to the operations of nature, it is sufficient for us to know, that, whatever the agents may be, whatever the manner of their operation, or the extent of their power, they depend upon the First Cause and are under his controul; and this indeed is all that we know; beyond this we are left in darkness. But, in what regards human actions, we have a more immediate concern.

It is of the highest importance to us, as moral and accountable creatures, to know what actions are in our own power, because it is for these only that we can be accountable to our Maker, or to our fellow men in society; by these only we can merit praise or blame; in these only all our prudence, wisdom, and virtue must be employed; and, therefore, with regard to them, the wise Author of nature has not left us in the dark.

Every man is led by nature to attribute to himself the free determinations of his own will, and to believe those events to be in his power which depend upon his will. [Note E.] On the other hand, it is self-evident, that nothing is in our power that is not subject to our will.

We grow from childhood to manhood, we digest our food, our blood circulates, our heart and arteries beat, we are sometimes sick and sometimes in health; all these things must be done by the power of some agent; but they are not done by our power. How do we know this? Because they are not subject to our will. This is the infallible criterion by which we distinguish what is our doing from what is not; what is in our power from what is not.

Human power, therefore, can only be exerted by will; and we are unable to conceive any active power to be exerted without will. Every man knows infallibly that what is done by his conscious will and intention, is to be imputed to him as the agent or cause; and that

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whatever is done without his will and intention, cannot be imputed to him with truth.

We judge of the actions and conduct of other men by the same rule as we judge of our own. In morals it is self-evident that no man can be the object either of approbation or of blame for what he did not. But how shall we know whether it is his doing or not? If the action depended upon his will, and if he intended and willed it, it is his action in the judgment of all mankind. But if it was done without his knowledge, or without his will and intention, it is as certain that he did it not, and that it ought not to be imputed to him as the agent.

When there is any doubt to whom a particular action ought to be imputed, the doubt arises only from our ignorance of facts; when the facts relating to it are known, no man of understanding has any doubt to whom the action ought to be imputed.

The general rules of imputation are self-evident. They have been the same in all ages, and among all civilized nations. No man blames another for being black or fair, for having a fever or the falling sickness; because these things are believed not to be in his power; and they are believed not to be in his power, because they depend not upon his will. We can never conceive that a man's duty goes beyond his power, or that his power goes beyond what depends upon his will.

Reason leads us to ascribe unlimited power to the Supreme Being. But what do we mean by unlimited power? It is power to do whatsoever he wills. To suppose him to do what he does not will to do, is absurd.

The only distinct conception I can form of active power is, that it is an attribute in a being by which he can do certain things if he wills. [Note F.] This, af-

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ter all, is only a relative conception. It is relative to the effect, and to the will of producing it. Take away these, and the conception vanishes. They are the handles by which the mind takes hold of it. When they are taken away, our hold is gone. The same is the case with regard to other relative conceptions. Thus velocity is a real state of a body, about which philosophers reason with the force of demonstration; but our conception of it is relative to space and time. What is velocity in a body? It is a state in which it passes through a certain space in a certain time. Space and time are very different from velocity; but we cannot conceive it but by its relation to them. The effect produced, and the will to produce it, are things different from active power, but we can have no conception of it, but by its relation to them.

Whether the conception of an efficient cause, and of real activity, could ever have entered into the mind of man, if we had not had the experience of activity in ourselves, I am not able to determine with certainty. The origin of many of our conceptions, and even of many of our judgments, is not so easily traced as philosophers have generally conceived. No man can recollect the time when he first got the conception of an efficient cause, or the time when he first got the belief that an efficient cause is necessary to every change in nature. The conception of an efficient cause may very probably be derived from the experience we have had in very early life of our own power to produce certain effects. But the belief, that no event can happen without an efficient cause, cannot be derived from experience. We may learn from experience what is, or what was, but no experience can teach us what necessarily must be.

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In like manner, we probably derive the conception of pain from the experience we have had of it in ourselves; but our belief that pain can only exist in a being that has life, cannot be got by experience, because it is a necessary truth; and no necessary truth can have its attestation from experience.

If it be so that the conception of an efficient cause enters into the mind, only from the early conviction we have that we are the efficients of our own voluntary actions, which I think is most probable, the notion of efficiency will be reduced to this, that it is a relation between the cause and the effect, similar to that which is between us and our voluntary actions. This is surely the most distinct notion, and, I think, the only notion we can form of real efficiency.

Now it is evident, that, to constitute the relation between me and my action, my conception of the action, and will to do it, are essential. For what I never conceived, nor willed, I never did.

If any man, therefore, affirms, that a being may be the efficient cause of an action, and have power to produce it, which that being can neither conceive nor will, he speaks a language which I do not understand. If he has a meaning, his notion of power and efficiency must be essentially different from mine; and, until he conveys his notion of efficiency to my understanding, I can no more assent to his opinion, than if he should affirm, that a being without life may feel pain.

It seems therefore to me most probable, that such beings only as have some degree of understanding and will, can possess active power; and that inanimate beings must be merely passive, and have no real activity. Nothing we perceive without us affords any good ground for ascribing active power to any inanimate being; and every thing we can discover in our own constitution, leads us to think, that active power cannot be exerted without will and intelligence.

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CHAP. VI.

OF THE EFFICIENT CAUSES OF THE PHENOMENA OF NATURE.

If active power, in its proper meaning, requires a subject endowed with will and intelligence, what shall we say of those active powers which philosophers teach us to ascribe to matter; the powers of corpuscular attraction, magnetism, electricity, gravitation, and others? Is it not universally allowed, that heavy bodies descend to the earth by the power of gravity; that, by the same power, the moon, and all the planets and comets, are retained in their orbits? Have the most eminent natural philosophers been imposing upon us, and giving us words instead of real causes?

In anwer to this, I apprehend, that the principles of natural philosophy, have, in modern times, been built upon a foundation that cannot be shaken, and that they can be called in question only by those who do not understand the evidence on which they stand. But the ambiguity of the words, *cause, agency, active power*, and the other words related to these, has led many to understand them, when used in natural philosophy, in a wrong sense, and in a sense which is neither necessary for establishing the true principles of natural philosophy, nor was ever meant by the most enlightened in that science.

To be convinced of this, we may observe, that those very philosophers who attribute to matter the power of gravitation, and other active powers, teach us, at the same time, that matter is a substance altogether inert, and merely passive; that gravitation, and the other attractive or repulsive powers which they ascribe to it, are not inherent in its nature, but impressed upon it by some external cause, which they do not pretend to know,

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or to explain. Now, when we find wise men ascribing action and active power to a substance which they expressly teach us to consider as merely passive and acted upon by some unknown cause, we must conclude, that the action and active power ascribed to it are not to be understood strictly, but in some popular sense.

It ought likewise to be observed, that although philosophers, for the sake of being understood, must speak the language of the vulgar, as when they say, the sun rises and sets, and goes through all the signs of the zodiac, yet they often think differently from the vulgar. Let us hear what the greatest of natural philosophers says, in the 8th definition prefixed to his Principia, "Voces autem attractionis, impulsus, vel propensionis cujuscunque in centrum, indifferenter et pro se mutuo promiscue usurpo; has voces non physice sed mathematicè considerando. Unde caveat lector, ne per hujus modi voces cogitet me speciem vel modum actionis, causamve aut rationem physicam, ali cubi definire; vel centris, quæ sunt puncta mathematica, vires vere et physice tribuere, si forte centra trahere, aut vires centrorum esse, dixero."

In all languages, action is attributed to many things which all men of common understanding believe to be merely passive; thus we say, the wind blows, the rivers flow, the sea rages, the fire burns, bodies move, and impel other bodies.

Every object which undergoes any change, must be either active or passive in that change. This is self-evident to all men from the first dawn of reason; and therefore the change is always expressed in language, either by an active or a passive verb. Nor do I know any verb, expressive of a change, which does not imply either action or passion. The thing either changes, or it is changed. But it is remarkable in language, that when an external cause of the change is not obvious, the

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change is always imputed to the thing changed, as if it were animated, and had active power to produce the change in itself. So we say, the moon changes, the sun rises and goes down.

Thus active verbs are very often applied, and active power imputed to things, which a little advance in knowledge and experience teaches us to be merely passive. This property, common to all languages, I endeavoured to account for it the second chapter of this Essay, to which the reader is referred.

A like irregularity may be observed in the use of the word signifying *cause*, in all languages, and of the words related to it.

Our knowledge of causes is very scanty in the most advanced state of society, much more is it so in that early period in which language is formed. A strong desire to know the causes of things, is common to all men in every state; but the experience of all ages shows, that this keen appetite, rather than go empty, will feed upon the husks of real knowledge where the fruit cannot be found.

While we are very much in the dark with regard to the real agents or causes which produce the phenomena of nature, and have, at the same time, an avidity to know them, ingenious men frame conjectures, which those of weaker understanding take for truth. The fare is coarse, but appetite makes it go down.

Thus, in a very ancient system, love and strife were made the causes of things. Plato made the causes of things to be matter, ideas, and an efficient architect. Aristotle, matter, form, and privation. Des Cartes thought matter, and a certain quantity of motion, given it by the Almighty at first, to be all that is necessary to make the material world. Leibnitz conceived the whole universe, even the material part of it, to be made up of *monades*, each of which is active and intelligent, and produces in itself, by its own active power, all the

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changes it undergoes from the beginning of its existence to eternity.

In common language, we give the name of a *cause* to a reason, a motive, an end, to any circumstance which is connected with the effect, and goes before it.

Aristotle, and the schoolmen after him, distinguished four kinds of causes, the efficient, the material, the formal, and the final. This, like many of Aristotle's distinctions, is only a distinction of the various meanings of an ambiguous word; for the efficient, the matter, the form, and the end, have nothing common in their nature, by which they may be accounted species of the same *genus;* but the Greek word which we translate *cause*, had these four different meanings in Aristotle's days, and we have added other meanings. We do not indeed call the matter or the form of a thing its cause; but we have final causes, instrumental causes, occasional causes, and I know not how many others.

Thus the word *cause* has been so hackneyed, and made to have so many different meanings in the writings of philosophers, and in the discourse of the vulgar, that its original and proper meaning is lost in the crowd.

With regard to the phenomena of nature, the important end of knowing their causes, besides gratifying our curiosity, is, that we may know when to expect them, or how to bring them about. This is very often of real importance in life; and this purpose is served, by knowing what, by the course of nature, goes before them and is connected with them; and this, therefore, we call the *cause* of such a phenomenon.

If a magnet be brought near to a mariner's compass, the needle, which was before at rest, immediately begins to move, and bends its course toward the magnet, or perhaps the contrary way. If an unlearned sailor is asked the cause of this motion of the needle, he is

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at no loss for an answer. He tells you it is the magnet; and the proof is clear; for, remove the magnet, and the effect ceases; bring it near, and the effect is again produced. It is, therefore, evident to sense, that the magnet is the cause of this effect.

A Cartesian philosopher enters deeper into the cause of this phenomenon. He observes, that the magnet does not touch the needle, and therefore can give it no impulse. He pities the ignorance of the sailor. The effect is produced, says he, by magnetic effluvia, or subtile matter, which passes from the magnet to the needle, and forces it from its place. He can even show you, in a figure, where these magnetic effluvia issue from the magnet, what round they take, and what way they return home again. And thus he thinks he comprehends perfectly how, and by what cause the motion of the needle is produced.

A Newtonian philosopher inquires what proof can be offered for the existence of magnetic effluvia, and can find none. He therefore holds it as a fiction, a hypothesis; and he has learned that hypotheses ought to have no place in the philosophy of nature. He confesses his ignorance of the real cause of this motion, and thinks, that his business, as a philosopher, is only to find from experiment the laws by which it is regulated in all cases.

These three persons differ much in their sentiments with regard to the real cause of this phenomenon; and the man who knows most, is he who is sensible that he knows nothing of the matter. Yet all the three speak the same language, and acknowledge that the cause of this motion is the attractive or repulsive power of the magnet.

What has been said of this, may be applied to every phenomenon that falls within the compass of natural philosophy. We deceive ourselves, if we conceive, that

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we can point out the real efficient cause of any one of them.

The grandest discovery ever made in natural philosophy, was that of the law of gravitation, which opens such a view of our planetary system, that it looks like something divine. But the author of this discovery was perfectly aware, that he discovered no real cause, but only the law or rule, according to which the unknown cause operates.

Natural philosophers, who think accurately, have a precise meaning to the terms they use in the science; and when they pretend to show the cause of any phenomenon of nature, they mean by the cause, a law of nature of which that phenomenon is a necessary consequence.

The whole object of natural philosophy, as Newton expressly teaches, is reducible to these two heads; first, by just induction from experiment and observation, to discover the laws of nature; and then to apply those laws to the solution of the phenomena of nature. This was all that this great philosopher attempted, and all that he thought attainable. And this indeed he attained in a great measure, with regard to the motions of our planetary system, and with regard to the rays of light.

But, supposing that all the phenomena that fall within the reach of our senses, were accounted for from the general laws of nature, justly deduced from experience; that is, supposing natural philosophy brought to its utmost perfection, it does not discover the efficient cause of any one phenomenon in nature.

The laws of nature are the rules according to which the effects are produced; but there must be a cause which operates according to these rules. The rules of navigation never navigated a ship. The rules of architecture never built a house.

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Natural philosophers, by great attention to the course of nature, have discovered many of her laws, and have very happily applied them to account for many phenomena; but they have never discovered the efficient cause of any one phenomenon; nor do those who have distinct notions of the principles of the science, make any such pretense.

Upon the theatre of nature we see innumerable effects, which require an agent endowed with active power; but the agent is behind the scene. Whether it be the Supreme Cause alone, or a subordinate cause or causes; and if subordinate causes be employed by the Almighty, what their nature, their number, and their different offices may be are things hid, for wise reasons without doubt, from the human eye.

It is only in human actions, that may be imputed for praise or blame, that it is necessary for us to know who is the agent; and in this, nature has given us all the light that is necessary for our conduct.

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CHAP. VII.

OF THE EXTENT OF HUMAN POWER.

Every thing laudable and praiseworthy in man, must consist in the proper exercise of that power which is given him by his Maker. This is the talent which he is required to occupy, and of which he must give an account to him who committed it to his trust.

To some persons more power is given than to others; and to the same person, more at one time, and less at another. Its existence, its extent, and its continuance depend solely upon the pleasure of the Almighty; but every man that is accountable must have more or less of it. For, to call a person to account, to approve, or disapprove of his conduct, who had no power to do good or ill, is absurd. No axiom of Euclid appears more evident than this.

As power is a valuable gift, to undervalue it is ingratitude to the giver; to overrate it, begets pride and presumption, and leads to unsuccessful attempts. It is therefore, in every man, a point of wisdom to make a just estimate of his own power. *Quid ferre recusent, quid valeant humeri.*

We can only speak of the power of man in general; and as our notion of power is relative to its effects, we can estimate its extent only by the effects which it is able to produce.

It would be wrong to estimate the extent of human power by the effects which it has actually produced. For every man had power to do many things which he did not, and not to do many things which he did; otherwise he could not be an object either of approbation, or of disapprobation, to any rational being.

The effects of human power are either immediate, or they are more remote.

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The immediate effects, I think, are reducible to two heads. We can give certain motions to our own bodies; and we can give a certain direction to our own thoughts.

Whatever we can do beyond this, must be done by one of these means, or both.

We can produce no motion in any body in the universe, but by moving first our own body as an instrument. Nor can we produce thought in any other person, but by thought and motion in ourselves.

Our power to move our own body, is not only limited in its extent, but in its nature is subject to mechanical laws. It may be compared to a spring endowed with the power of contracting or expanding itself, but which cannot contract without drawing equally at both ends, nor expand without pushing equally at both ends; so that every action of the spring is always accompanied with an equal reaction in a contrary direction.

We can conceive a man to have power to move his whole body in any direction, without the aid of any other body, or a power to move one part of his body without the aid of any other part. But philosophy teaches us that man has no such power.

If he carries his whole body in any direction with a certain quantity of motion, this he can do only by pushing the earth, or some other body, with an equal quantity of motion in the contrary direction. If he but stretch out his arm in one direction, the rest of his body is pushed with an equal quantity of motion in the contrary direction.

This is the case with regard to all animal and voluntary motions, which come within the reach of our senses. They are performed by the contraction of certain muscles; and a muscle, when it is contracted, draws equally at both ends. As to the motions antecedent to the contraction of the muscle, and conse-

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quent upon the volition of the animal, we know nothing, and can say nothing about them.

We know not even how those immediate effects of our power are produced by our willing them. We perceive not any necessary connection between the volition and exertion on our part, and the motion of our body that follows them.

Anatomists inform us, that every voluntary motion of the body is performed by the contraction of certain muscles, and that the muscles are contracted by some influence derived from the nerves. But, without thinking in the least, either of muscles or nerves, we will only the external effect, and the internal machinery, without our call, immediately produces that effect.

This is one of the wonders of our frame, which we have reason to admire; but to account for it, is beyond the reach of our understanding.

That there is an established harmony between our willing certain motions of our bodies, and the operation of the nerves and muscles which produces those motions, is a fact known by experience. This volition is an act of the mind. But whether this act of the mind have any physical effect upon the nerves and muscles, or whether it be only an occasion of their being acted upon by some other efficient, according to the established laws of nature, is hid from us. So dark is our conception of our own power when we trace it to its origin.

We have good reason to believe, that matter had its origin from mind, as well as all its motions; but how, or in what manner it is moved by mind, we know as little as how it was created.

It is possible therefore, for any thing we know, that what we call the immediate effects of our power, may not be so in the strictest sense. Between the will to produce the effect, and the production of it, there may be agents or instruments of which we are ignorant.

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This may leave some doubt, whether we be, in the strictest sense, the efficient cause of the voluntary motions of our own body. But it can produce no doubt with regard to the moral estimation of our actions.

The man who knows that such an event depends upon his will, and who deliberately wills to produce it, is, in the strictest moral sense, the cause of the event; and it is justly imputed to him, whatever physical causes may have concurred in its production.

Thus, he who maliciously intends to shoot his neighbour dead, and voluntarily does it, is undoubtedly the cause of his death, though he did no more to occasion it than to draw the trigger of the gun. He neither gave to the ball its velocity, nor to the powder its expansive force, nor to the flint and steel the power to strike fire; but he knew that what he did must be followed by the man's death, and did it with that intention; and therefore he is justly chargeable with the murder.

Philosophers may therefore dispute innocently, whether we be the proper efficient causes of the voluntary motions of our own body; or whether we be only, as Malebranche thinks, the occasional causes. The determination of this question, if it can be determined, can have no effect on human conduct.

The other branch of what is immediately in our power, is to give a certain direction to our own thoughts. This, as well as the first branch, is limited in various ways. It is greater in some persons than in others, and in the same person is very different, according to the health of his body, and the state of his mind. But that men, when free from disease of body and of mind, have a considerable degree of power of this kind, and that it may be greatly increased by practice and habit, is sufficiently evident from experience, and from the natural conviction of all mankind.

Were we to examine minutely into the connection between our volitions, and the direction of our thoughts

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which obeys these volitions; were we to consider how we are able to give attention to an object for a certain time, and turn our attention to another when we choose, we might perhaps find it difficult to determine, whether the mind itself be the sole efficient cause of the voluntary changes in the direction of our thoughts, or whether it requires the aid of other efficient causes.

I see no good reason why the dispute about efficient and occasional causes, may not be applied to the power of directing our thoughts, as well as to the power of moving our bodies. In both cases, I apprehend the dispute is endless, and if it could be brought to an issue, would be fruitless.

Nothing appears more evident to our reason, than that there must be an efficient cause of every change that happens in nature. But when I attempt to comprehend the manner in which an efficient cause operates, either upon body or upon mind, there is a darkness which my faculties are not able to penetrate.

However small the immediate effects of human power seem to be, its more remote effects are very considerable.

In this respect, the power of man may be compared to the Nile, the Ganges, and other great rivers, which make a figure upon the globe of the earth, and traversing vast regions, bring sometimes great benefit, at other times great mischief, to many nations; yet, when we trace those rivers to their source, we find them to rise from inconsiderable fountains and rills.

The command of a mighty prince, what is it, but the sound of his breath, modified by his organs of speech? But it may have great consequences; it may raise armies, equip fleets, and spread war and desolation over a great part of the earth.

The meanest of mankind has considerable power to do good, and more to hurt himself and others.

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From this I think we may conclude, that although the degeneracy of mankind be great, and justly to be lamented, yet men, in general, are more disposed to employ their power in doing good, than in doing hurt to their fellow men. [Note G.] The last is much more in their power than the first; and, if they were as much disposed to it, human society could not subsist, and the species must soon perish from the earth.

We may first consider the effects which may be produced by human power upon the material system.

It is confined indeed to the planet which we inhabit; we cannot remove to another; nor can we produce any change in the annual or diurnal motions of our own.

But, by human power, great changes may be made upon the face of the earth; and those treasures of metals and minerals that are stored up in its bowels, may be discovered and brought forth.

The Supreme Being, could, no doubt, have made the earth to supply the wants of man, without any cultivation by human labour. Many inferior animals, who neither plant, nor sow, nor spin, are provided for by the bounty of Heaven. But this is not the case with man. He has active powers and ingenuity given him, by which he can do much for supplying his wants; and his labour is made necessary for that purpose.

His wants are more than those of any other animal that inhabits this globe; and his resources are proportioned to them, and put within the sphere of his power.

The earth is left by nature in such a state as to require cultivation for the accommodation of man.

It is capable of cultivation, in most places, to such a degree, that, by human labour, it may afford subsistence to an hundred times the number of men it could in its natural state.

Every tribe of men, in every climate, must labour for their subsistence and accommodation; and their

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supply is more or less comfortable, in proportion to the labour properly employed for that purpose.

It is evidently the intention of nature, that man should be laborious, and that he should exert his powers of body and mind for his own, and for the common good. And, by his power properly applied, he may make great improvement upon the fertility of the earth, and a great addition to his own accommodation and comfortable state.

By clearing, tilling, and manuring the ground, by planting and sowing, by building cities and harbours, draining marshes and lakes, making rivers navigable, and joining them by canals, by manufacturing the rude materials which the earth, duly cultivated, produces in abundance, by the mutual exchange of commodities and of labour, he may make the barren wilderness the habitation of rich and populous states.

If we compare the city of Venice, the province of Holland, the empire of China, with those places of the earth which never felt the hand of industry, we may form some conception of the extent of human power upon the material system, in changing the face of the earth, and furnishing the accommodations of human life.

But, in order to produce these happy changes, man himself must be improved.

His animal faculties are sufficient for the preservation of the species; they grow up of themselves, like the trees of the forest, which require only the force of nature and the influences of heaven.

His rational and moral faculties, like the earth itself, are rude and barren by nature, but capable of a high degree of culture; and this culture he must receive from parents, from instructors, from those with whom he lives in society, joined with his own industry.

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If we consider the changes that may be produced by man upon his own mind, and upon the minds of others, they appear to be great.

Upon his own mind he may make great improvement, in acquiring the treasures of useful knowledge, the habits of skill in arts, the habits of wisdom, prudence, self-command, and every other virtue. It is the constitution of nature, that such qualities as exalt and dignify human nature are to be acquired by proper exertions; and, by a contrary conduct, such qualities as debase it below the condition of brutes.

Even upon the minds of others, great effects may be produced by means within the compass of human power; by means of good education, of proper instruction, of persuasion, of good example, and by the discipline of laws and government.

That these have often had great and good effects on the civilization and improvement of individuals, and of nations, cannot be doubted. But what happy effects they might have, if applied universally with the skill and address that is within the reach of human wisdom and power, is not easily conceived, or to what pitch the happiness of human society, and the improvement of the species, might be carried.

What a noble, what a divine employment of human power is here assigned us? How ought it to rouse the ambition of parents, of instructors, of lawgivers, of magistrates, of every man in his station, to contribute his part toward the accomplishment of so glorious an end?

The power of man over his own and other minds, when we trace it to its origin, is involved in darkness, no less than his power to move his own and other bodies.

How far we are properly efficient causes, how far occasional causes, I cannot pretend to determine.

We know that habit produces great changes in the mind; but how it does so, we know not. We know

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that example has a powerful, and, in the early period of life, almost an irresistible effect; but we know not how it produces this effect. The communication of thought, sentiment and passion, from one mind to another, has something in it as mysterious as the communication of motion from one body to another.

We perceive one event to follow another, according to established laws of nature, and we are accustomed to call the first the cause, and the last the effect, without knowing what is the bond that unites them. In order to produce a certain event, we use means which, by laws of nature, are connected with that event; and we call ourselves the cause of that event, though other efficient causes may have had the chief hand in its production.

Upon the whole, human power, in its existence, in its extent, and in its exertions, is entirely dependent upon God, and upon the laws of nature which he has established. This ought to banish pride and arrogance from the most mighty of the sons of men. At the same time, that degree of power which we have received from the bounty of heaven, is one of the noblest gifts of God to man; of which we ought not to be insensible, that we may not be ungrateful, and that we may be excited to make the proper use of it.

The extent of human power is perfectly suited to the state of man, as a state of improvement and discipline. It is sufficient to animate us to the noblest exertions. By the proper exercise of this gift of God, human nature, in individuals and in societies, may be exalted to a high degree of dignity and felicity, and the earth become a paradise. On the contrary, its perversion and abuse is the cause of most of the evils that afflict human life.

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NOTES

TO THE THIRD VOLUME.

NOTE A. Page 351.

HAD our venerable author commenced these Essays, on the active powers of man, with that impartiality and deliberation which are displayed in his former treatises; had he examined with his philosophical acumen the phenomena of volition and action, and from them deduced his general propositions, the science of ethics would undoubtedly have gained much by his labours. In treating of the intellectual powers, he proceeded according to the maxims of Bacon and Newton, but in his last work, the present volume, his mind was evidently influenced by a favourite system of theology. He who discovered the truth, that all our knowledge is not derived from *sensation* and *reflection*, might also have proved, that all the faculties of the human mind are not reducible to two denominations. *We think, we will, we act.* Here are three mental operations, which belong to three different faculties. The first belongs to the understanding, the second to the will, and the third to a faculty not the least important, which metaphysical writers have not honoured with a distinct name and place in their systems. It is *the faculty of agency*, which has generally been confounded with the will. There could be no agency without the will, any more than will without thought; but these things ought not to be confounded. The power by which we *will*, is not the power by which we *do* what we will. They are as distinct as the volition to walk, and the act of walking, which is consequent upon the volition; or as the perception of an external object, and the belief of its existence. It is true, that where the power of do-

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ing any thing exists, the performance of it immediately follows the will to do it immediately, because the Author of our constitution has thus connected volition and action; but the faculty of the will may exist, and operate, after the power of agency is gone. I conceive that I can speak; I will to speak; but the power of doing the thing which I will, was, without my knowledge, previously taken away. In this case my Creator has separated the power of agency from the power of volition. Should I continue, from any derangement of intellect, to think that I could speak, I might continue to will, without producing the action of speaking.

To the division of the faculties of the human mind, therefore, into *understanding* and *will* we object, because they do not include the whole. To a division into *speculative* and *active powers* we object also, because it seems to imply, that the faculties of the understanding are not *active* powers, as well as those of the will; when, in truth, we are active in thinking, as well as in willing, or in doing. All the powers of the human mind are active, or else we must speak of "powerless power," and of action without activity. If we are not *active* in thinking, willing and doing what we will, we must be *passive;* and Dr. Reid has sufficiently exposed the doctrine of a passive power.

NOTE B. Page 351.

What our author here calls speculative powers are as necessary as those which he calls active, to constitute man an agent, capable of performing those duties which are required of him by his Maker. He must perceive his duty, will to perform it, and actually exert his power of doing what he wills. To say, therefore, that our Maker gave us certain *active powers*, meaning the powers of the will, in distinction from the faculty of the understanding, that we might answer the intention of our formation, is as unreasonable as to say, that by volition without intelligence we can act the part allotted to intelligent, voluntary, and efficient beings. It is our business to manage all our powers of understanding, will, and agency, which are all active powers. Indeed, without regu-

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lating our thoughts we cannot regulate our volitions; for certain volitions do as invariably follow certain perceptions and sensations, as actions follow the volitions with which they are connected, or as belief follows the perception of visible objects. We never will without motive; and we should have no motive to volition if it were not perceived by the understanding.

NOTE C. Page 352.

The word מום in Hebrew, ΜΩΜΟΣ in Greek, and *blame* in English, are used to denote any *spot, blemish*, or *defect*, either in natural objects or human conduct. We blame the *being* who abuses his power, as well as the *action* denominated *an abuse* of power. We blame *the man* for the perversion of his faculties of understanding, will, and agency. We blame him for stupidity, malevolent feelings, and inordinate passions. We justly blame him, in many cases, for not exerting his power, and for that negligence, in consequence of which, he never thought of determining, or of not determining, to perform duties which were devolved upon him in the very constitution of his nature. It is common for men to speak of a good and bad *quality*, as well as of a good and bad *action*: but good and bad are terms of praise and blame: we attribute, therefore, praise and blame to something besides the use and abuse of our powers. If actions alone are to be blamed, actions alone, and not beings, who perform the actions, should be punished. In this case actions and not men would be the only proper subjects of discipline. To us it is not self-evident, that "every thing virtuous and praiseworthy must lie in the right use of our power;" for we attribute praise to that *man* who uses his faculties aright; to a benevolent disposition; to such desires, joys, hopes, fears, sorrows, and aversions as become the condition of man. We praise an artist for his skill, a logician for acute reasoning, a philosopher for his wisdom, a judge for an impartial disposition, a woman for delicacy, and even for beauty; a servant for his activity and fidelity; a government for its energy; and in morals, every thing which is conformable to the standard of morality.

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NOTE D. Page 352.

Something of honour, dignity, and worth, we certainly attribute to man on account of those faculties which exalt him above the inanimate and brute creation. Before his intellectual powers are brought into exercise, we esteem him more dignified from his very constitution, than those animals which shall perish. *Corruption* and *depravity* are words more commonly applied to a state, a faculty, a quality, a character, than to any single operation of any power. To corrupt or deprave an action would be the same as to make an individual action worse than it is. A mental action can be neither better nor worse than it is, for it does not exist long enough to undergo any change, even if it were possible, to make the nature of an operation, a volition for instance, worse than it is.

The whole animal and mental nature of man is capable of deterioration. The eye may be corrupted by base humours; the tympanum of the ear may be so injured as not to distinguish sounds; the taste may be vitiated; the sense of feeling and of smelling may become obtuse; the powers of perception and sensation may become so much impaired as not to do their office in relation to many objects; the memory may be weakened; the judgment may be liable to error; the reasoning faculty may be deranged; and all the powers of agency may be debilitated. We often witness a deprivation of the bodily organs, and of the faculties of thinking, willing, and acting. Add to this, that every language conveys this general opinion of mankind, that the human race has degenerated from its original perfection. The terms for error in judgment, and vice in practice, would never have been known without the existence of the evils which they designate; and degradation, corruption, depravity, imperfection, deterioration, and a thousand similar words would never have entered into the vocabulary of any but fallen beings, or of those who should have spoken concerning them.

NOTE E. Page 387.

The free determinations of his own will. Although man freely exerts all the powers, of every description, which he pos-

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sesses, yet we apprehend, that all human actions are as completely under the control of the Deity as any of the operations of nature. That he controls them in the same manner cannot be affirmed, because we do not know it to be a fact, and it seems reasonable to conclude, from the difference between mind and matter, that the former is regulated by means very different from physical energy. The operations of the mind, of every description, may properly be called mental actions, and for all these we are as accountable to our Maker, as for the external effects of volition: for if the former were taken away the latter could not exist. We cannot will without understanding, and we cannot move without will. It seems just, therefore, to assert, that man is accountable to his Maker for the use of all these faculties of the body and mind, which constitute him a voluntary, animal, and intellectual agent. Every man is led by nature to attribute to himself all the determinations, volitions, or operations of the faculty called THE WILL; and to believe these events to be in his power which depend upon his volitions. If our author intends nothing but this by man's free determination of his own will, we agree with him; but if he means that we must determine to will in every volition, before we can will, then we apprehend he has absurdly supposed one act of the will must precede another, by which we will to will, *ad infinitum*.

NOTE F. Page 388.

The only distinct conception we can form of *the power of agency* is, that it is an attribute of a being, by which he can do certain things which he wills. But we can conceive of the active power of volition, as well as the active power of thought. We have a relative notion of the power of willing, as well as of doing many things which we will.

We will to walk, and having the necessary bodily organs, the mind produces through them the act of walking. Here is a power to will, and a power to do that which was willed. The extent of this power of agency is well worthy of investigation. We shall offer a few remarks which may suggest others to the mind of the intelligent reader, that may be of use

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to him in perusing some of the following chapters. What then can we do? The inquiry respects not the mechanical effects of mechanism, or the animal effects of purely animal principles. But what power of agency has the Author of our nature coupled with the will?

1st, In a sound person, there is a power of performing all those external actions of which the mechanical and animal nature of man is capable. When the organs are perfect the motion willed follows the volition.

2dly, The power of agency extends to many, if not all of the operations of the understanding, in a greater or less degree. If an object of sense exists and I will to perceive it, the action of perceiving follows. From past experience I know, that the table when felt, gives me certain sensations; I will to have similar sensations, by similar means, and the sensations follow the use of those external means. I will to imagine some strange object, and I find the power of imagination in operation. I will to judge, to reason, to reflect, and I find that I have power to do what I willed. Some power over the memory and consciousness also seems coupled with the will.

The power of doing what we will with our intellectual faculties, however, is so imperfect, that should we conceive ourselves able to suspend all thought, and will to do it, the suspension would not follow. Many have willed to suspend, for a time, consciousness, and memory in particular, but have found themselves unable. In like manner, should one think he had power to prevent sensation, when pricked with a pin, and should he will not to feel, he would find that his volition was not connected with any power of producing the effect which was willed. It seems, therefore, that the power of agency is circumscribed in relation to the body and the understanding.

3dly, It remains for us to inquire if the power of agency extends to the faculty of the will, so as to regulate its volitions. We think; and when we will to think, the object of our power of agency is the act of thinking. We perform the external action of writing, and then the act of writing is the object of agency. We think and write, when we will, because the

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Supreme Being has connected the power of performing those operations with the will to do them. But is volition ever the object of agency? Willing is an active operation, all must allow; and we ask, "Is volition the object of volition?" If we will to have a certain volition, must that act of the will follow the willing to have it? An apple and an egg lie before me. I have the opportunity of making my election between them. I have not yet determined which I will take, but I will to determine. Will a determination immediately follow my will to determine, even as the motion of my fingers follows my volition to write? Is choice so connected with an antecedent will to choose, as the voluntary motions of the body with the operations of the will, which relate to them? We apprehend that it is not; for every one, who will examine his own mental operations, will find, that after his will to make a choice between the egg and the apple, he must perceive some motive for his choice. If, then, he chooses from the perception of some motive of choice, his determination is not in consequence of any power of producing operations of the will, which power of agency is connected in our mental constitution with the will to produce such operations. We feel persuaded, therefore, that no act of the will follows a determination to produce an act of the will, in the same manner, and for the same reason that bodily motion, or intellectual operation, follows volition. We will to speak, and speak, because the power of doing so is joined with the volition: we will to think upon a particular subject, and thought follows the volition; but if we will to have a choice, a determination, a volition, the volition which a man should conceive himself able to produce will not follow, without the intervening perception of some motive. Should a man will to determine in any case, he never could determine without the perception of some motive for choice. He perceived some motive for willing to choose between the apple and the egg, and he must now perceive some motive for the choice. He might have perceived some ground for preference, and might have made an election, without coming to any prior determination to make a choice.

One volition, however, may constitute the motive to another volition. Because I think I need the exercise, I determine,

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one hour hence, to walk. The hour expires, and I resolve to walk, because I remember my previous determination. In like manner, because I have resolved to determine, I look about for such a motive as will induce me to make some final determination.

NOTE G. Page 403.

Our author does not affirm, that it is from any regard to duty, or veneration for the Deity, that men in general are more disposed to employ their power in doing good, than in doing hurt to one another. Without giving man credit for the least piety, this philanthropic disposition may be accounted for, upon the principle of natural desires, affections, and social constitution. We refer the reader to Essay II. chap. 2, for the author's explanation of this subject.

END OF THE THIRD VOLUME.

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